

**DRAINAGE REPORT
FOR
HIGH POINT SUBDIVISION**

FEBRUARY 1993

**Prepared For
Mechenbier Construction, Inc.**

**Prepared By
Brasher Engineering, Inc.**

Project No.: 90452

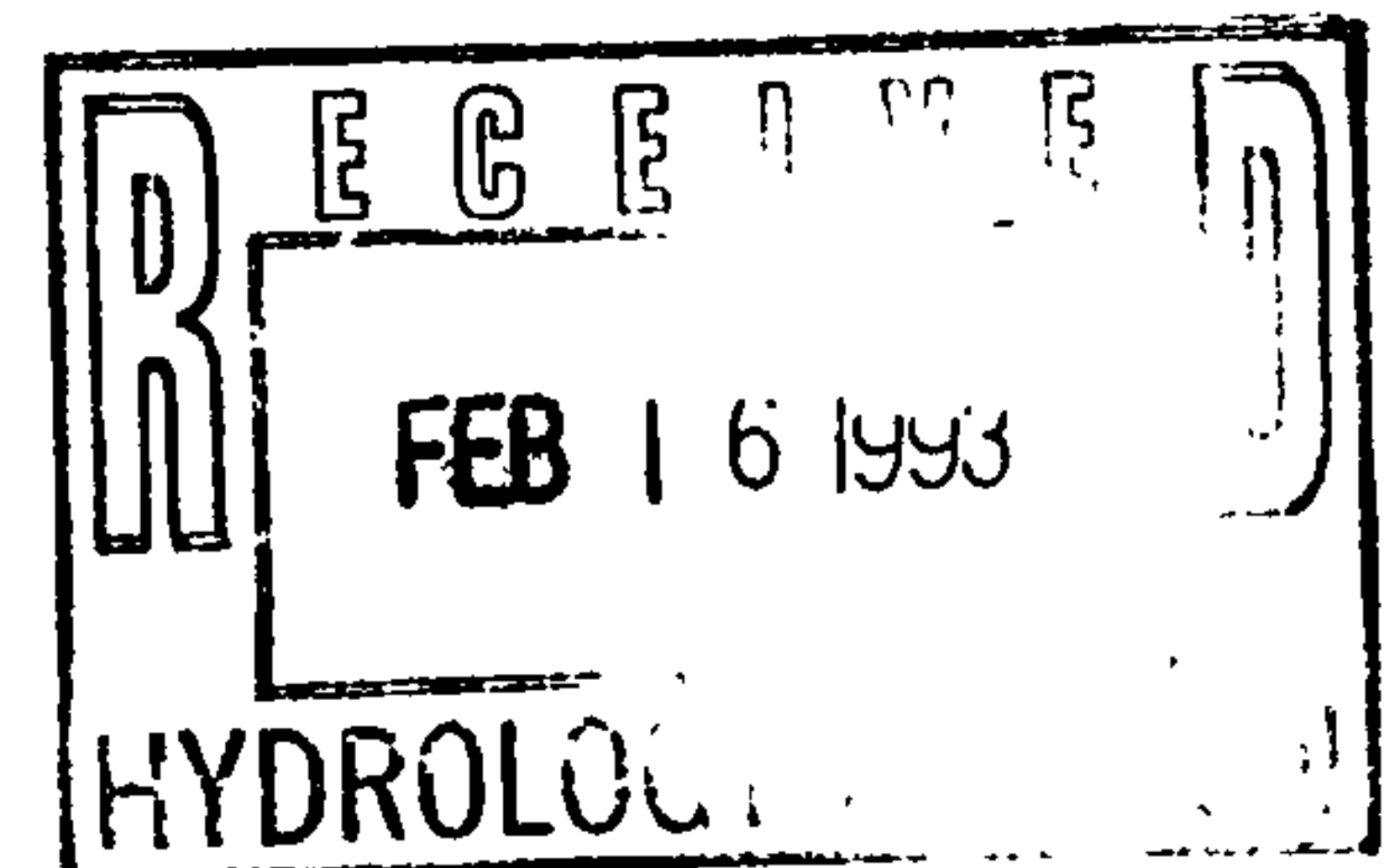


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Appendix A: Calculations

EXHIBITS

- A. Pre-Design Conference
- B. Piedra Lisa Dam Hydrograph
- C. Vicinity Map
- D. Flood Hazard Boundary Map
- E. Subdivision Layout Plan
- F. Grading and Drainage Plan
- G. Water, Sewer & Storm Drain Plan

I. Purpose

The purpose of this report is to analyze the storm drainage impact for the proposed subdivision as requested by Mr. Fred Aguirre, City of Albuquerque Drainage Engineer. On October 22, 1992, we met with Mr. Aguirre to discuss the project. A "Pre-Design Conference" form was completed by Mr. Aguirre (see Exhibit A).

II. Site Location and Existing Condition

The site is located at the northeast corner of the intersection of Menaul Blvd. and Tramway Blvd. NE containing approximately 1.44 acres. The site is currently undeveloped and slopes from the east to the west with an average slope of 5.5%. The site is bounded on the south by Menaul Blvd., on the west by the Tramway bike path, on the east by a 7-11 office building, and on the north by the Piedra Lisa Channel.

Storm water runoff from the site currently sheet flows partially to the Piedra Lisa Channel and partially to an existing 48" storm sewer located within the Tramway bike path approximately 30 feet west of the property. Off site runoff currently enters the site from the 7-11 office building east of the site.

The Piedra Lisa Channel is currently fed by the Piedra Lisa Dam, approximately 2000 feet upstream of the project site. The Piedra Lisa Dam was constructed by the City of Albuquerque in 1981 (COA Project No. 08-006-82, 01510). The published 100 year outflow from the Piedra Lisa Dam to the

Piedra Lisa Channel is 56 cfs (see Exhibit B - Piedra Lisa Hydrograph). The only other contributing flow to the Piedra Lisa Channel, upstream of the project site is runoff from Punta De Vista Drive. The estimated 100 year flow in the Piedra Lisa Channel at the project site is 150 cfs (see Appendix A - Calculations). Therefore, in accordance with the accepted "prudent line" determination (setback of 6 feet per 100 cfs), the prudent line for the Piedra Lisa Channel is 9 feet from the edge of the floodplain for the arroyo. The prudent line is shown on Exhibit E - Drainage Plan.

III. Proposed Condition

Proposed development of the site includes 9 residential lots surrounding a cul-de-sac. A portion of the property will be graded to drain to the cul-de-sac. A single type "D" catch basin will be installed at the downstream end of the cul-de-sac to intercept the storm water runoff (see Appendix A - Calculations). The catch basin will be connected to the existing storm sewer manhole located in the Tramway Bike Path. The capacity of the existing 48" storm sewer, flowing full, is 195 cfs (see Appendix A - Calculations). Storm runoff contributing to the 48" storm sewer is the CBC crossing Menaul from the south plus the two "double C" inlets at Menaul, east of Tramway plus the "single D" inlet in the Tramway bike path. These flows add up to 143 cfs entering the 48" storm sewer. Therefore, the storm sewer has adequate capacity for developed runoff from this site.

Storm water runoff from back yards will be graded to drain through openings in the property line block walls to either the Piedra Lisa Channel, the Tramway bike path, or Menaul Blvd. Gravel mulch will be installed at the

block wall outlets to reduce erosion (see Exhibit E - Grading and Drainage Plan for details). Off site runoff from the east will be diverted by the property line block walls at the east project property line and continue to discharge to Menaul Blvd. As shown on the Grading and Drainage Plan, there are storm water inlets located at Tramway to intercept this runoff.

IV. Flood Zone

The project site is not in a 100 year flood zone. See Exhibit D - Flood Hazard Boundary Map. As shown on the flood map, the 100 year flood is confined in the existing Piedra Lisa Channel. The channel currently has a 100 foot right-of-way. The actual width of the channel is approximately 30 feet and is centered in the right-of-way. The channel section at the project site has a capacity, flowing full, of 924 cfs.

V. Design Criteria

Calculations shown in Appendix A are based on "Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria for the City of Albuquerque, New Mexico, August, 1991".

VI. References

1. City of Albuquerque, Development Process Manual, Volume II, Design Criteria, Chapter 22.
2. Handbook of Hydraulics, 6th Edition, by Ernest F. Brater and Horace

Williams King.

- 3. Hydrology for Engineers, 3rd Edition, by Linsley/Kohler/Paulhus.**
- 4. Handbook of Steel Drainage & Highway Construction Products, 3rd Edition, published by the American Iron and Steel Institute (AISI).**
- 5. Modern Sewer Design, 2nd Edition, published by the American Iron and Steel Institute (AISI).**
- 6. Design and Construction of Sanitary and Storm Sewers, prepared by a Joint Committee of the American Society of Civil Engineers and the Water Pollution Control Federation, ASCE M & R No. 37.**

11-Jan-93

Calculations: Total Basin

Calculations are based on "Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria for the City of Albuquerque, New Mexico, August 1991 - basins < 40 acres".

Precipitation Zone = 4

Depth at 100-year, 6-hour storm: (Table 2)

P = 2.90 inches

Land Treatments:

From Table 5 - Percent Treatment D

Single Family Residential =

$$7 \cdot \text{SQR}((N \cdot N) + (5 \cdot N))$$

where N = units/acre

$$N = 9/1.44 = 6.25, \text{ ok } > 6$$

$$N = 6.25$$

Therefore Percent Treatment D = 58.70%

(includes local streets)

Areas: (acres)	Existing	Proposed
Treatment A	1.44	0.00
Treatment B	0.00	0.30
Treatment C	0.00	0.29
Treatment D	0.00	0.85
Total (acres) =	1.44	1.44

Excess Precipitation (E): (Table 8)	100 yr	10 yr	2 yr
Treatment A	0.80	0.28	0.02
Treatment B	1.08	0.46	0.11
Treatment C	1.46	0.73	0.27
Treatment D	2.64	1.69	1.01

Weighted E:	100 year Existing E*A	100 year Proposed E*A	10 year Existing E*A	10 year Proposed E*A	2 year Existing E*A	2 year Proposed E*A
Treatment A	1.15	0.00	0.40	0.00	0.03	0.00
Treatment B	0.00	0.32	0.00	0.14	0.00	0.03
Treatment C	0.00	0.42	0.00	0.21	0.00	0.08
Treatment D	0.00	2.24	0.00	1.44	0.00	0.86
Total	1.15	2.99	0.40	1.79	0.03	0.97

Weighted E = Total E*A/Total Area

Total Area = 1.44

	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Weighted E (inches) =	0.80	2.08	0.28	1.24	0.02	0.67
Weighted E (feet) =	0.07	0.17	0.02	0.10	0.00	0.06

Volume = Weighted E * Watershed Area:

	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Volume (acre-feet) =	0.10	0.25	0.03	0.15	0.00	0.08
Volume (cubic feet) =	4,182	10,859	1,464	6,484	105	3,520

Peak Discharge (cfs/acre) = Q(p): (Table 9)	Q(p) 100 year	Q(p) 10 year	Q(p) 2 year
Treatment A	2.20	0.87	0.05
Treatment B	2.92	1.45	0.38
Treatment C	3.73	2.26	1.00
Treatment D	5.25	3.57	2.17

Total Q(p), cfs:	100 year Existing Q(p)*A	100 year Proposed Q(p)*A	10 year Existing Q(p)*A	10 year Proposed Q(p)*A	2 year Existing Q(p)*A	2 year Proposed Q(p)*A
Treatment A	3.17	0.00	1.25	0.00	0.07	0.00
Treatment B	0.00	0.88	0.00	0.44	0.00	0.11
Treatment C	0.00	1.08	0.00	0.66	0.00	0.29
Treatment D	0.00	4.46	0.00	3.03	0.00	1.84
Total Q (cfs) =	3.17	6.42	1.25	4.12	0.07	2.25

RATIONAL METHOD:

Coefficient C: (Table 11)	100 year	10 year	2 year
Treatment A	0.39	0.23	0.02
Treatment B	0.52	0.38	0.16
Treatment C	0.66	0.59	0.43
Treatment D	0.94	0.93	0.93
Peak Intensity (in/hour): (Table 10)	5.61	3.83	2.34

Q = CIA (cfs):	100 year Existing CIA	100 year Proposed CIA	10 year Existing CIA	10 year Proposed CIA	2 year Existing CIA	2 year Proposed CIA
Treatment A	3.15	0.00	1.27	0.00	0.07	0.00
Treatment B	0.00	0.88	0.00	0.44	0.00	0.11
Treatment C	0.00	1.07	0.00	0.66	0.00	0.29
Treatment D	0.00	4.48	0.00	3.03	0.00	1.85
Total Q (cfs) =	3.15	6.43	1.27	4.12	0.07	2.25

BRASHER ENGINEERING, INC.

11930 Menaul Blvd. NE, Suite 113
Albuquerque, New Mexico 87112
(505) 298-0422

Project Name High Point Subdivision
Project No 90452 Date 2-10-93
Subject 100 year flow from Punta De Vista
to the Piedra Lisa Channel
By JBW Sheet 1 of 1

AREA CONTRIBUTING STORM WATER RUNOFF TO
THE PIEDRA LISA CHANNEL UPSTREAM OF THE
PROJECT SITE AND DOWNSTREAM OF THE PIEDRA
LISA DAM IS 32 ACRES.

THEREFORE FLOW FROM THIS AREA (RATIONAL METHOD) IS:

$$Q_{100} = C i A$$

$$C = 0.60 \text{ (typical residential coefficient for runoff)}$$

$$i = 4.84 = (2.2)(2.2)$$

$$A = 32 \text{ acres}$$

$$\therefore Q_{100} = 93 \text{ cfs}$$

FLOW FROM THE PIEDRA LISA DAM (EXHIBIT B) = 56 cfs.

$\therefore$ FLOW IN THE CHANNEL @ THE PROJECT SITE:

$$93 \text{ cfs} + 56 \text{ cfs} = 149 \text{ cfs} \text{ use } 150 \text{ cfs. for prudent line determination.}$$

PRUDENT LINE:

$$\frac{6 \text{ feet}}{100 \text{ cfs}} \times 150 \text{ cfs} = 9 \text{ feet from edge of flood plain.}$$

BRASHER ENGINEERING, INC.

11930 Menaul Blvd. NE, Suite 113
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(505) 296-0422

Project Name High Point Subdivision
Project No 90452 Date 2-10-93
Subject 100 year overflow spillway
By DSM Sheet 2 of 2

The inlet will have a 100 year overflow spillway.

Overflow spillway by weir equation:

$$Q = 3.33 L H^{3/2}$$

where $Q = 4.22$ cfs (100 year flow)

$$H = 0.50 \text{ feet}$$

$$\therefore L = 3.58 \text{ feet}$$

Drainage * Grading Plan provides 4 feet. ✓

The overflow spillway will be located
in the proposed drainage/utility easement.

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11930 Menaul Blvd. NE, Suite 113
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(505) 298-0422

Project Name High Point Subdivision
Project No 90452 Date 2-10-93
Subject Capacity of Proposed Single "D" Inlet
By JSV Sheet 1 of 12

Area contributing flow to inlet = 0.87 acres

Developed:

Treatment A = 0 acres

Treatment B = 0.15 acres

Treatment C = 0 acres

Treatment D = 0.72 acres

0.87 acres

$$Q_{100} = 4.22 \text{ cfs}$$

$$Q_{10} = 2.79 \text{ cfs}$$

$$Q_2 = 1.62 \text{ cfs}$$

The proposed curb type will be 4" mountable curb.

The right-of-way will be built up @ 2% from top of curb to right-of-way. The distance from the right-of-way line to the top of curb is 5' $\Rightarrow$ 0.1 feet.

$$\text{Capacity of Single "D" inlet} = Q = CLH^{3/2}$$

$$\text{where } C = 2.6$$

$$L = 7.5 \text{ ft}$$

$$H = 0.43$$

$$\therefore Q_{\text{inlet}} = 5.5 \text{ cfs.} \quad \checkmark \text{ 100 year capacity.}$$

The overflow for this situation will be flow over the top of the curb at the west/downstream end of the project site. Runoff will overflow to the Tramway Bike Path where the existing runoff is currently flowing.

BRASHER ENGINEERING, INC.

11930 Menaul Blvd. NE, Suite 113
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(505) 296-0422

Project Name High Point Subdivision
Project No 90452 Date 2-10-93
Subject HGL - 18" SD.

By JRM Sheet 1 of 1

Capacity of the proposed 18" storm sewer:

$$Q = \frac{0.463 D^{8/3} S^{1/2}}{n} \quad \text{Manning's Eqn.}$$

where: $D = 1.5$

$S = 0.042$

$n = 0.013 \text{ (RCP)}$

$$Q_{\text{capacity}} = 21.52 \text{ cfs. (flowing full)}$$

$$\frac{d}{D} = \frac{(\text{depth})}{(\text{DIA})} = 0.30$$

@ 4.22 cfs.

$$d = 0.30(1.5) = 0.45'$$

BRASHER ENGINEERING, INC.

11930 Menaul Blvd. NE, Suite 113
 Albuquerque, New Mexico 87112
 (505) 298-0422

Project Name High Point Subdivision
 Project No 90452 Date 2-10-93
 Subject Existing 48" SD Capacity
 By JSW Sheet 1 of 1

Capacity of Existing 48" storm sewer flowing full:

$$Q = \frac{1.486 A^{5/3} S^{1/2}}{n p^{2/3}}$$

Where $A = \frac{\pi d^2}{4} = 12.57 \text{ sf.}$

$$S = 0.0184$$

$$n = 0.013 \text{ (rcp)}$$

$$p = 2\pi r = 12.57$$

$$Q_{48"} = 195 \text{ cfs}$$

Flow contributing runoff to 48" storm sewer:

1. CBC Crossing Menaul

$$Q = CA \sqrt{2gh}$$

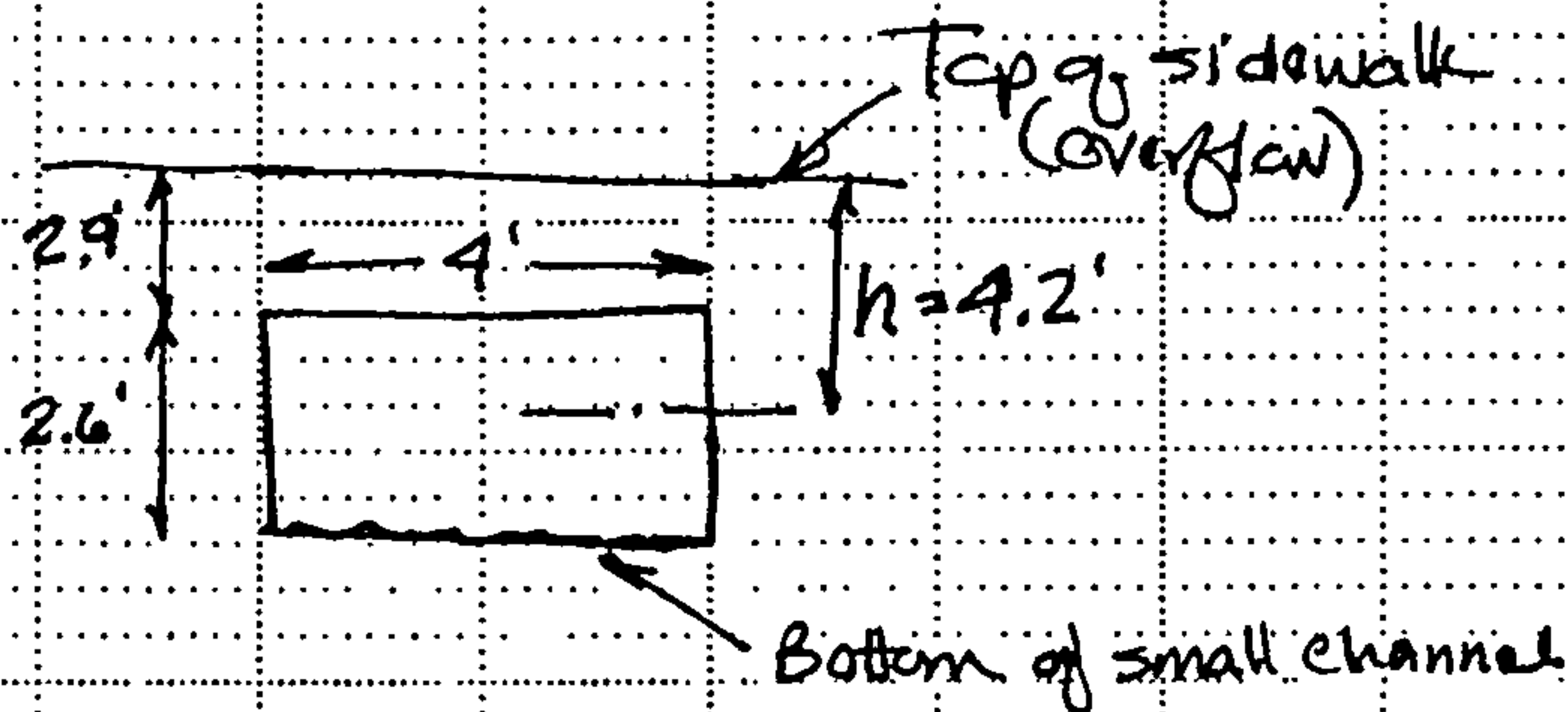
Where, $C = 0.6$

$$A = (2.6)(4) = 10.40$$

$$g = 32.2$$

$$h = 4.2$$

$$Q_{CBC} = 102.62 \text{ cfs.}$$



2. Double "C" inlets along Menaul - Two - one on each side of the street.

$$\text{Inlet Capacity} = 15 \times 2 = 30 \text{ cfs}$$

3. Single "O" inlet in Tramway Bike Path

$$\text{Inlet Capacity} = 10 \text{ cfs.}$$

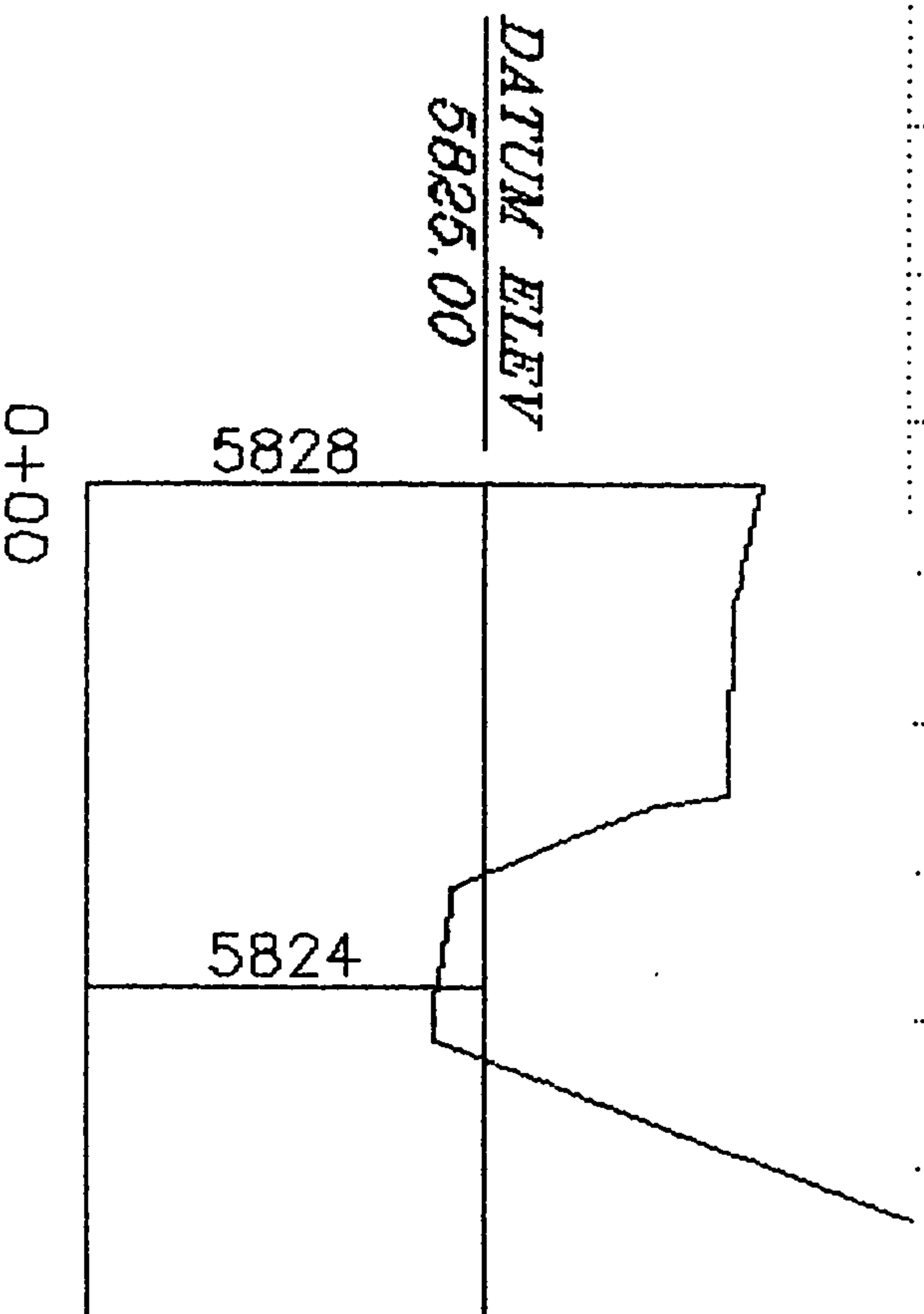
$\therefore$ Total contributing flow to 48" SD = $103 + 30 + 10 = 143 \text{ cfs.}$ ✓
 Capacity = 195 cfs.

BRASHER ENGINEERING, INC.

11990 Menaul Blvd. NE, Suite 119
Albuquerque, New Mexico 87112
(505) 296-0422

Project Name High Point Subdivision
Project No 90452 Date 2-10-93
Subject Piedra Lisa Channel Capacity

By [Signature] Sheet 1 of 1



TYPICAL CROSS SECTION OF PIEDRA LISA ARROYO

HORIZ. SCALE: 1" = 30'
VERT. SCALE: 1" = 5'

Capacity (from full):

$$Q = \frac{1.486 A^{5/3} S^{1/2}}{n P^{2/3}}$$

$$\text{where } A = 68.3 \text{ ft}^2$$

$$P = 33.2 \text{ ft}$$

$$S = 0.0286 \text{ ft/ft}$$

$$n = 0.030$$

$$\therefore Q_{\text{average}} = 924 \text{ cfs}$$

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

EXHIBIT A

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: H 23 DATE: 10/22/92
EPC NO.: _____ DRB NO.: _____ ZONE: C1
SUBJECT: John Mechenbick Subd.
STREET ADDRESS: _____
LEGAL DESCRIPTION: Sproul Security

APPROVAL REQUESTED: ☒ PRELIMINARY PLAT _____ FINAL PLAT
_____ SITE DEVELOPMENT PLAN _____ BUILDING PERMIT
_____ GRADING/PAVING PERMIT _____ OTHER

ATTENDANCE: WHO REPRESENTING
JACKIE McDowell _____
FRED J. AGUIRRE _____

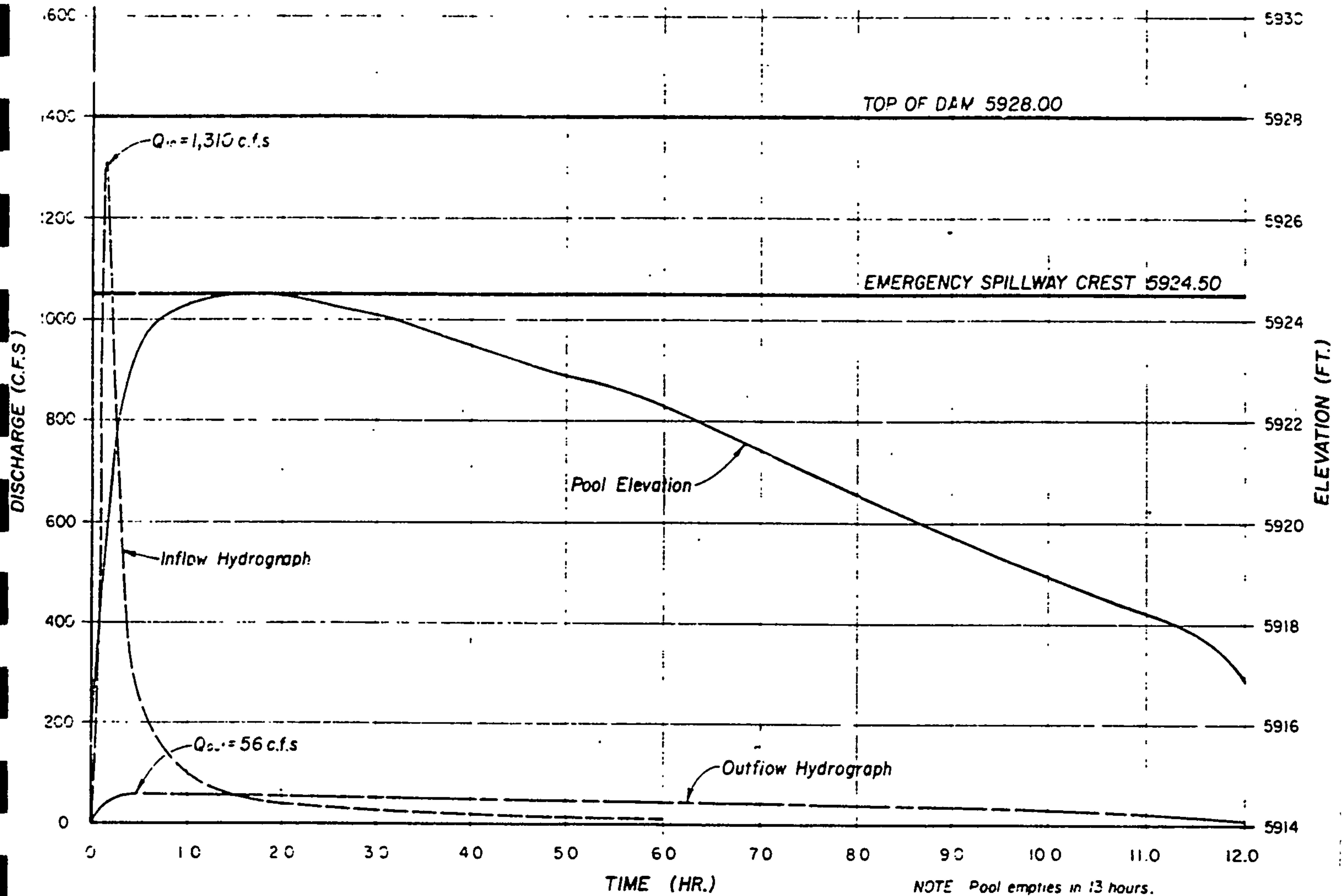
FINDINGS:
An approved drainage report will be required for plat approval. An acceptable concept for this site with respect to the close proximity of the arroyo is a cut-off wall along the street property line next to the arroyo.
• Free discharge into the arroyo is acceptable. However, the storm drain within the proposed cul-de-sac must ~~have~~ have a 100yr overflow system to the arroyo.
• Recommend that this project be scheduled for a Preapplication Meeting and Sketch Plat Review.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: [Signature]
TITLE: _____
DATE: 10/22/92

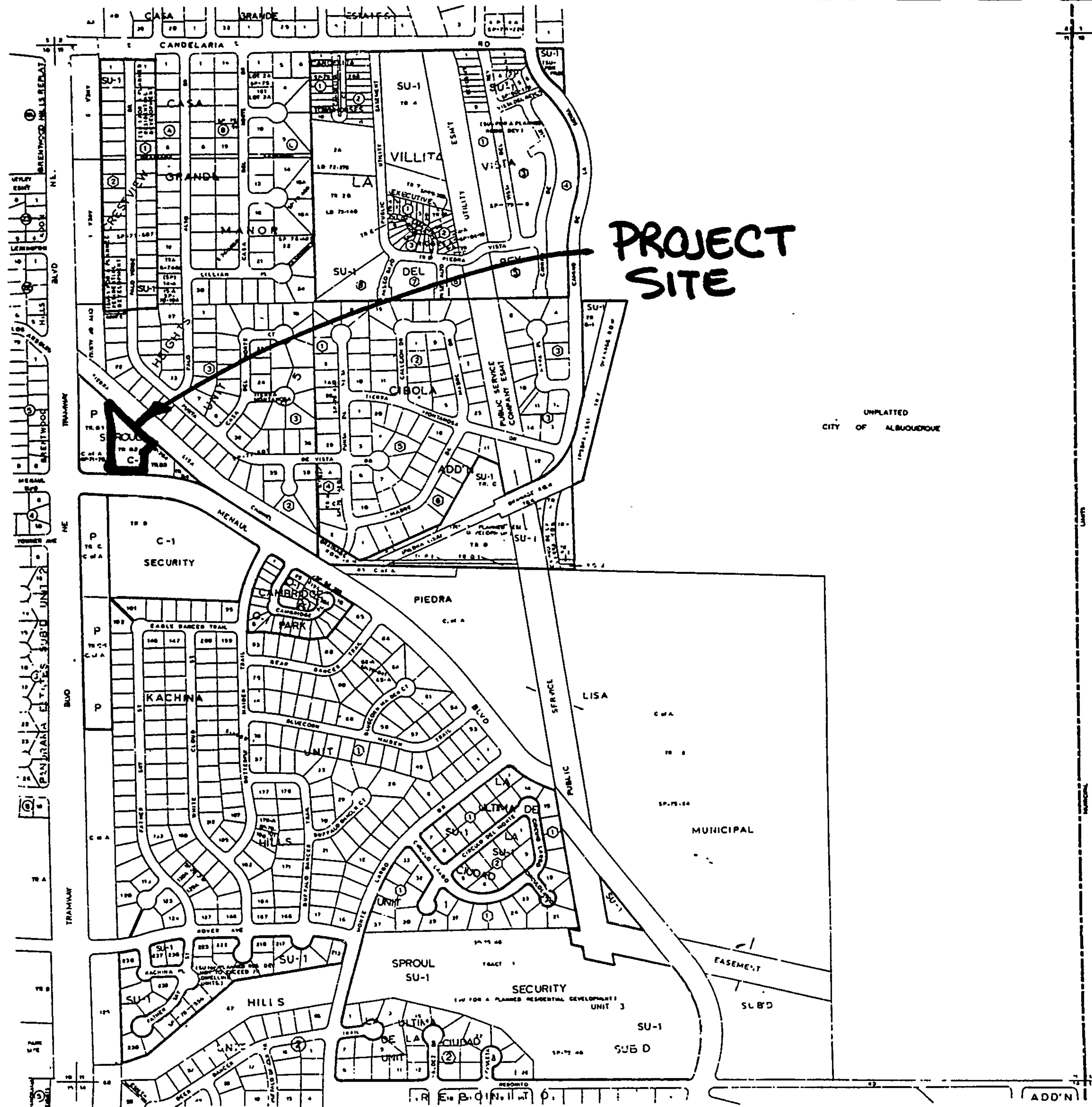
SIGNED: [Signature]
TITLE: Civil Engineer
DATE: 10-22-92

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.



1% CHANCE STORM
INFLOW & OUTFLOW

PREPARED UNDER THE DIRECTION OF 			CITY OF ALBUQUERQUE			
	TITLE: PIEDRA LISA DAM HYDROLOGY					
PROJECT NUMBER		APPROVALS		ENGINEER	DATE	APPROVALS
01510						
		DRAWING NO.			SHEET 2 OF 14	



SCALE
0 100 200 300 400

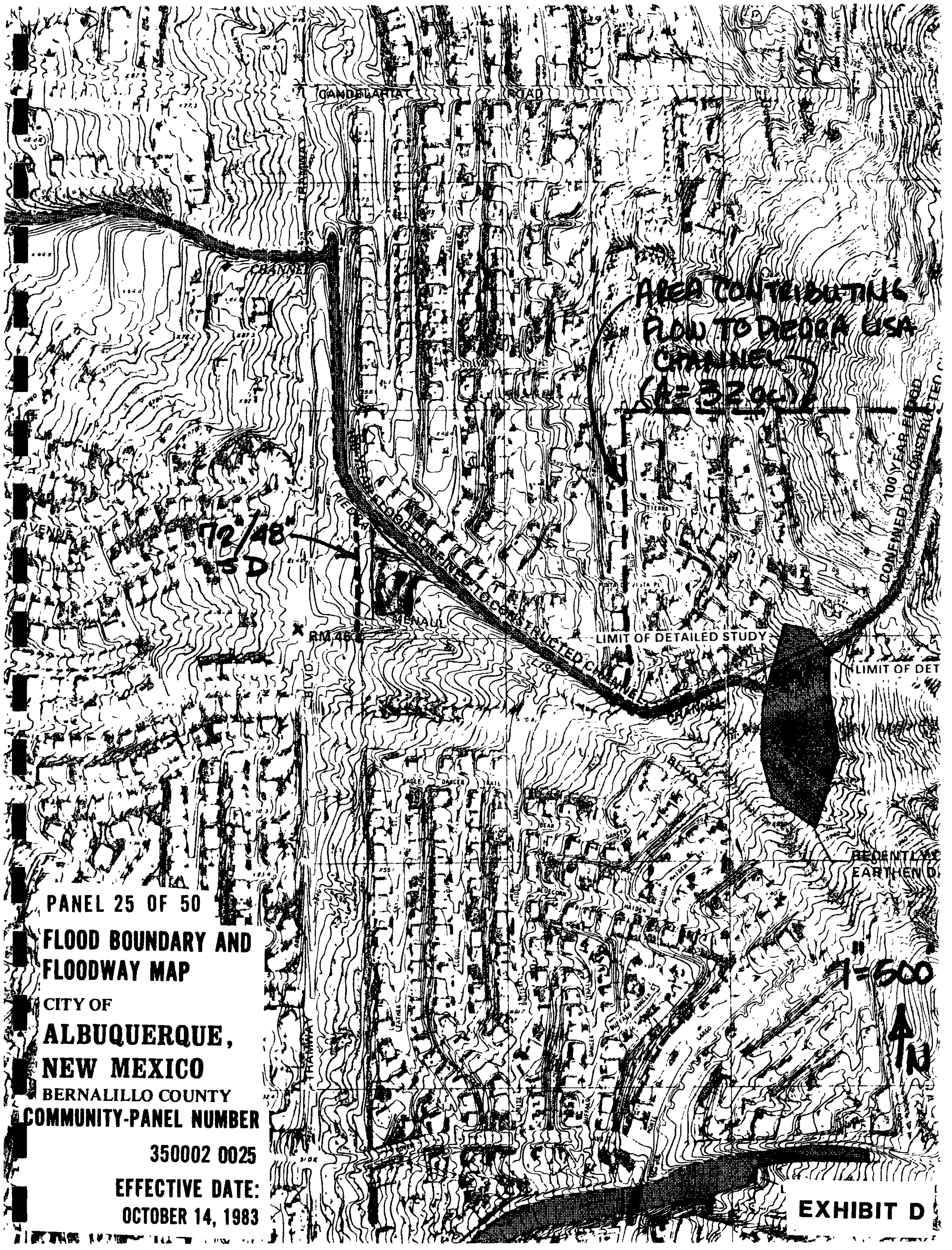
LEGAL DESCRIPTION
T 36 N
R 4 E
SEC 11

UNIFORM PROPERTY CODE
1-825-000

MAP AMENDED THROUGH
RABCH 1985

H-23-Z
CITY OF ALBUQUERQUE
PLANNING DEPARTMENT

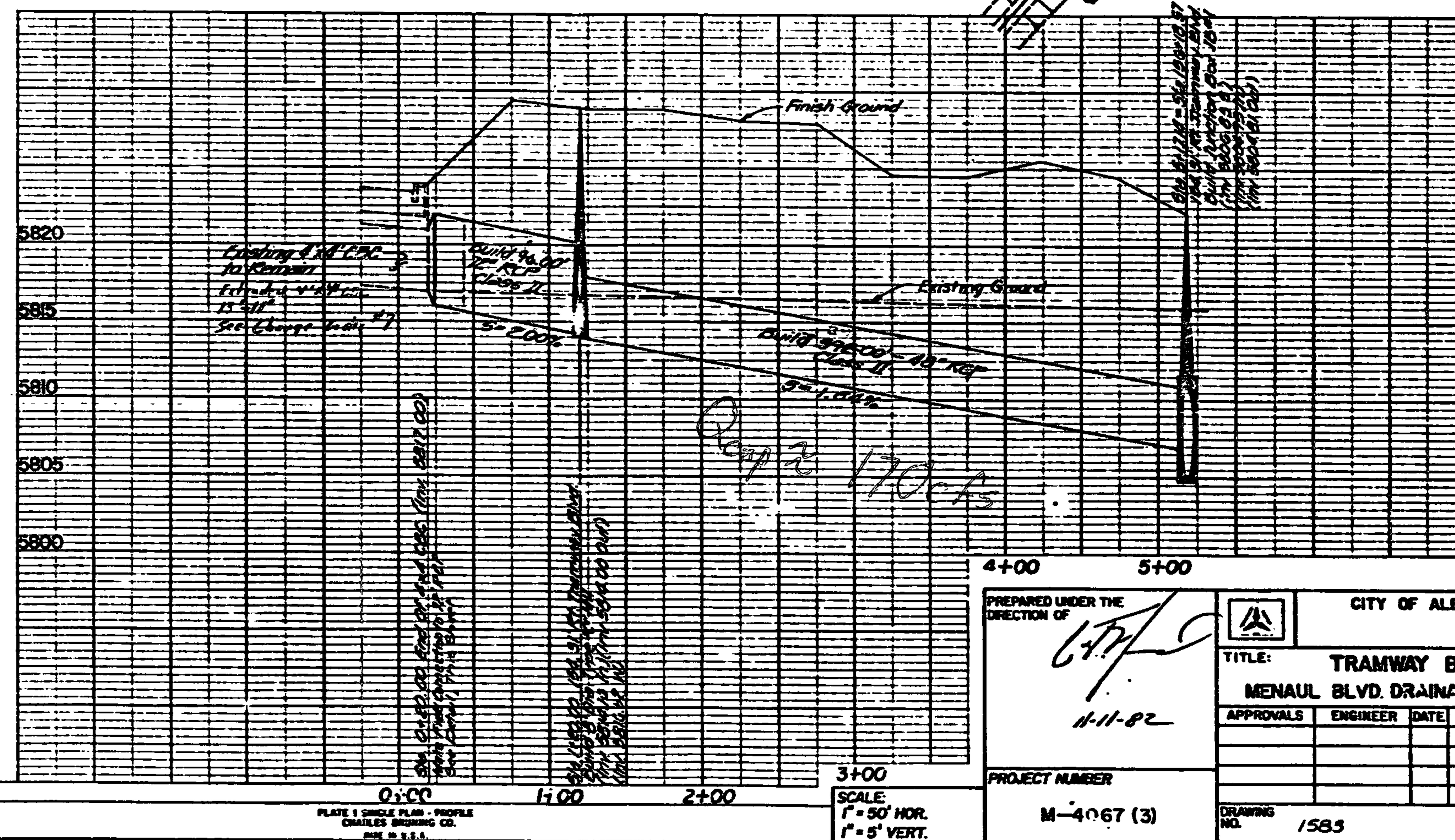
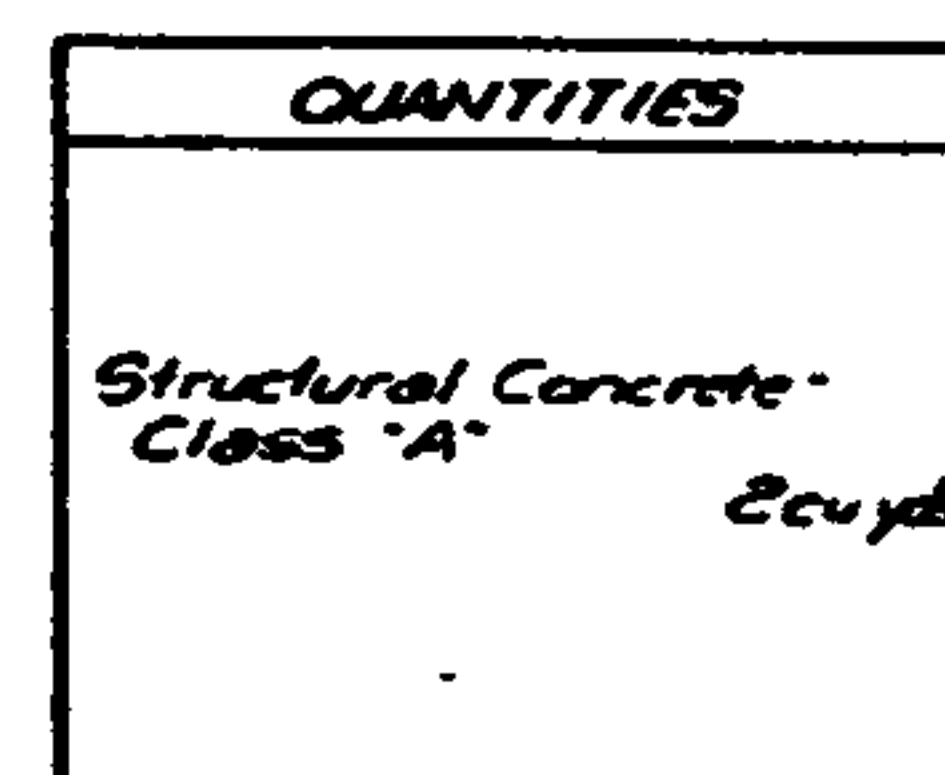
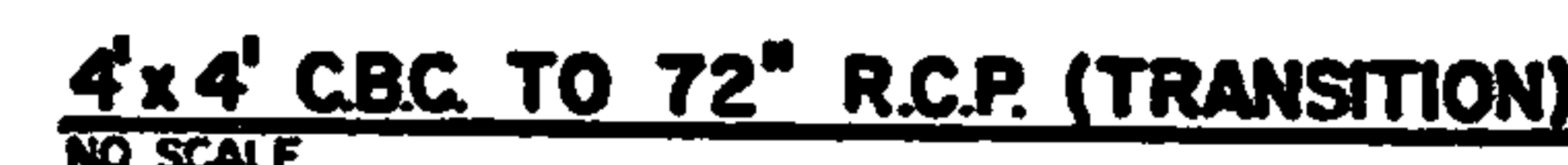
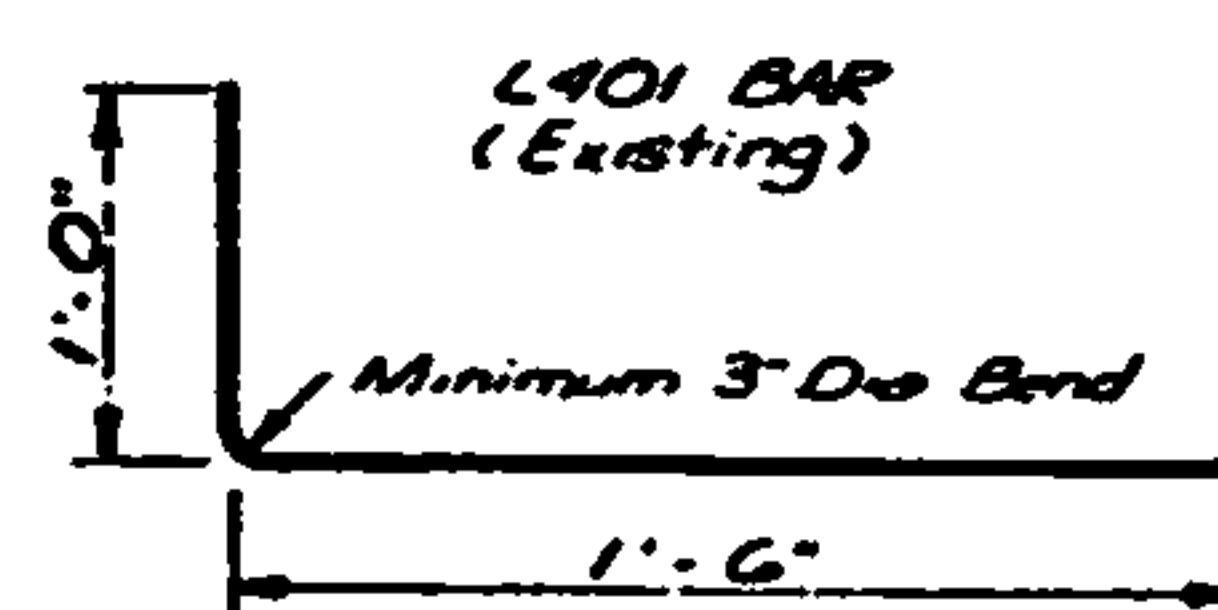
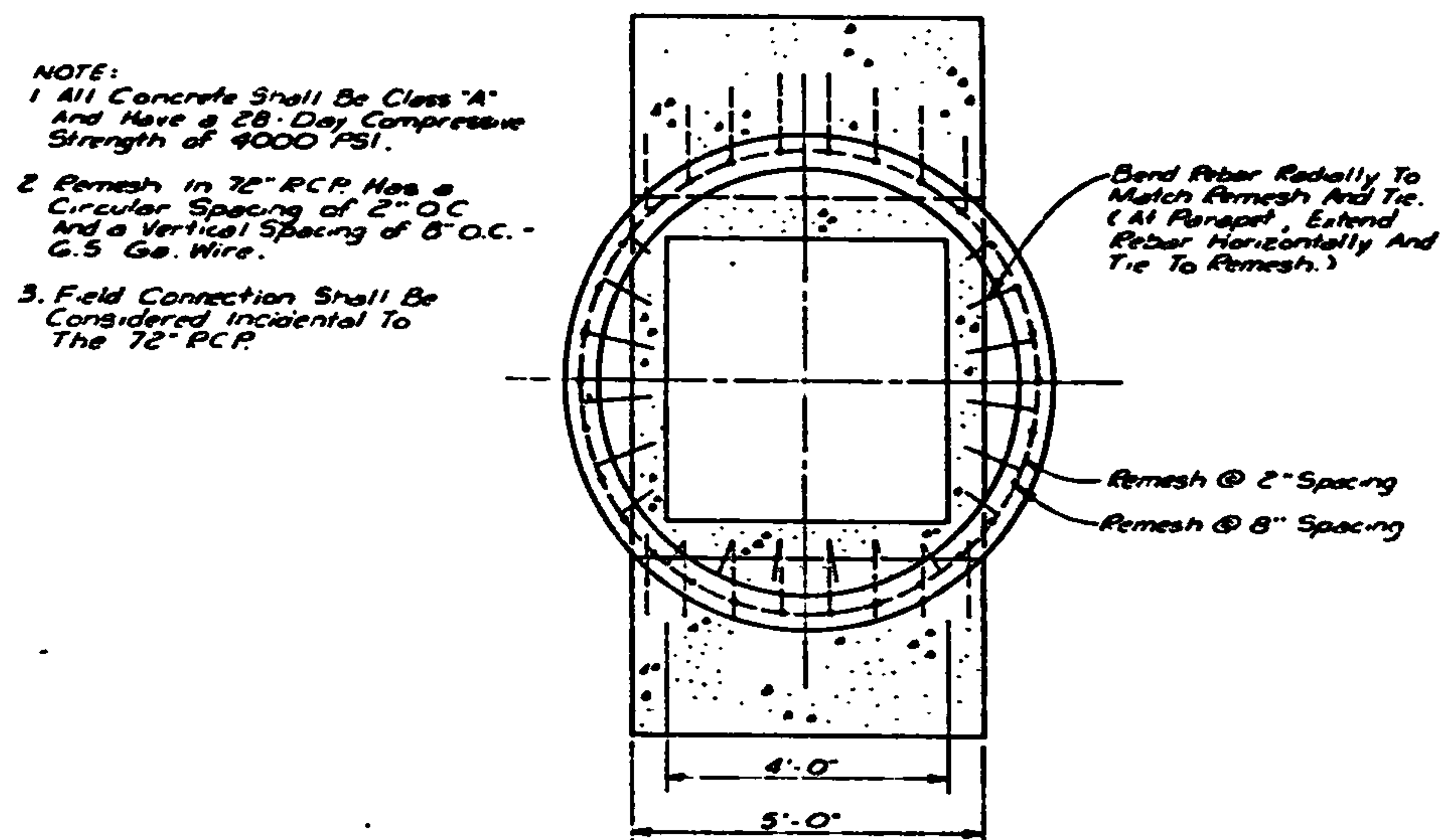
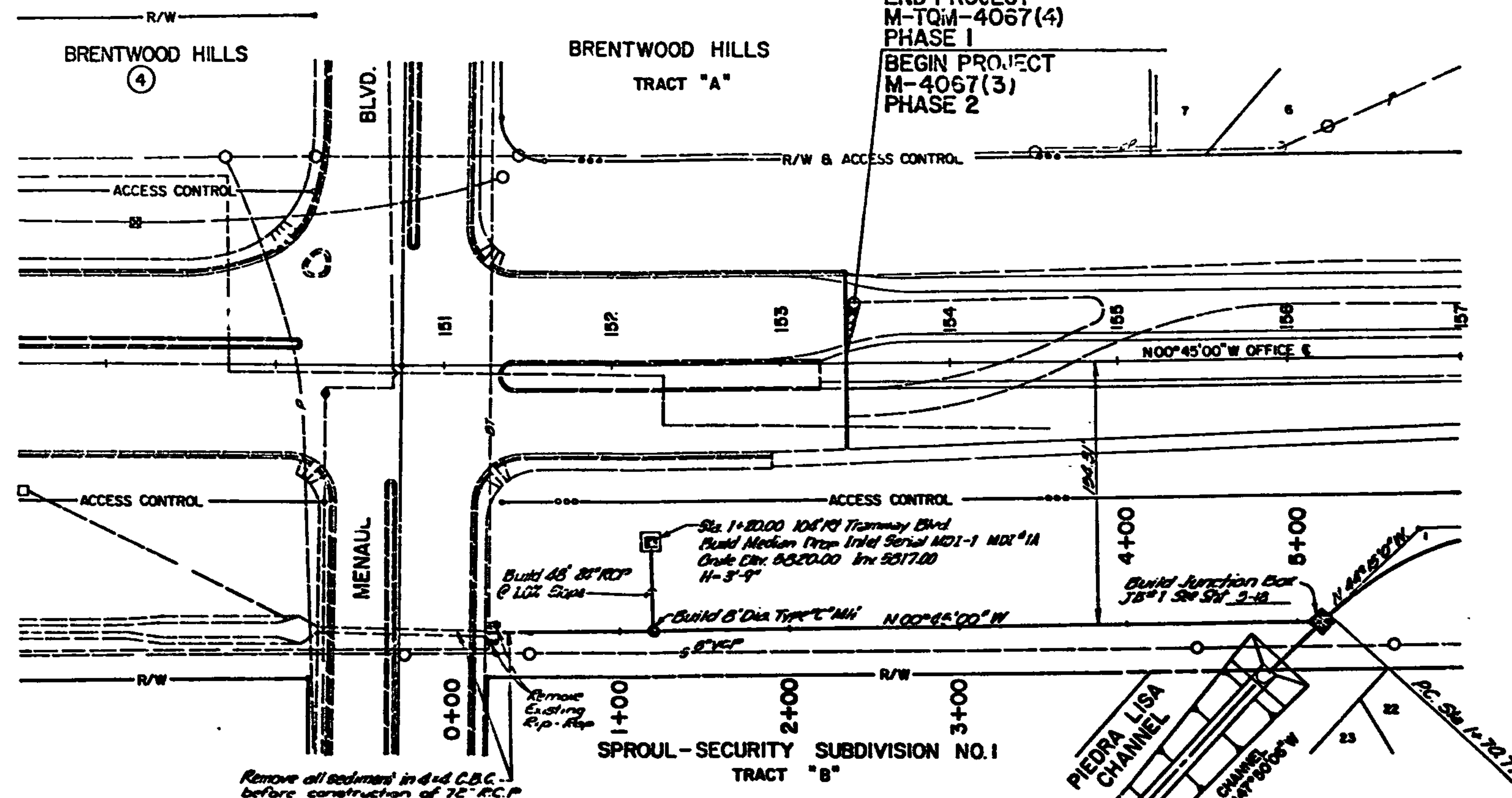
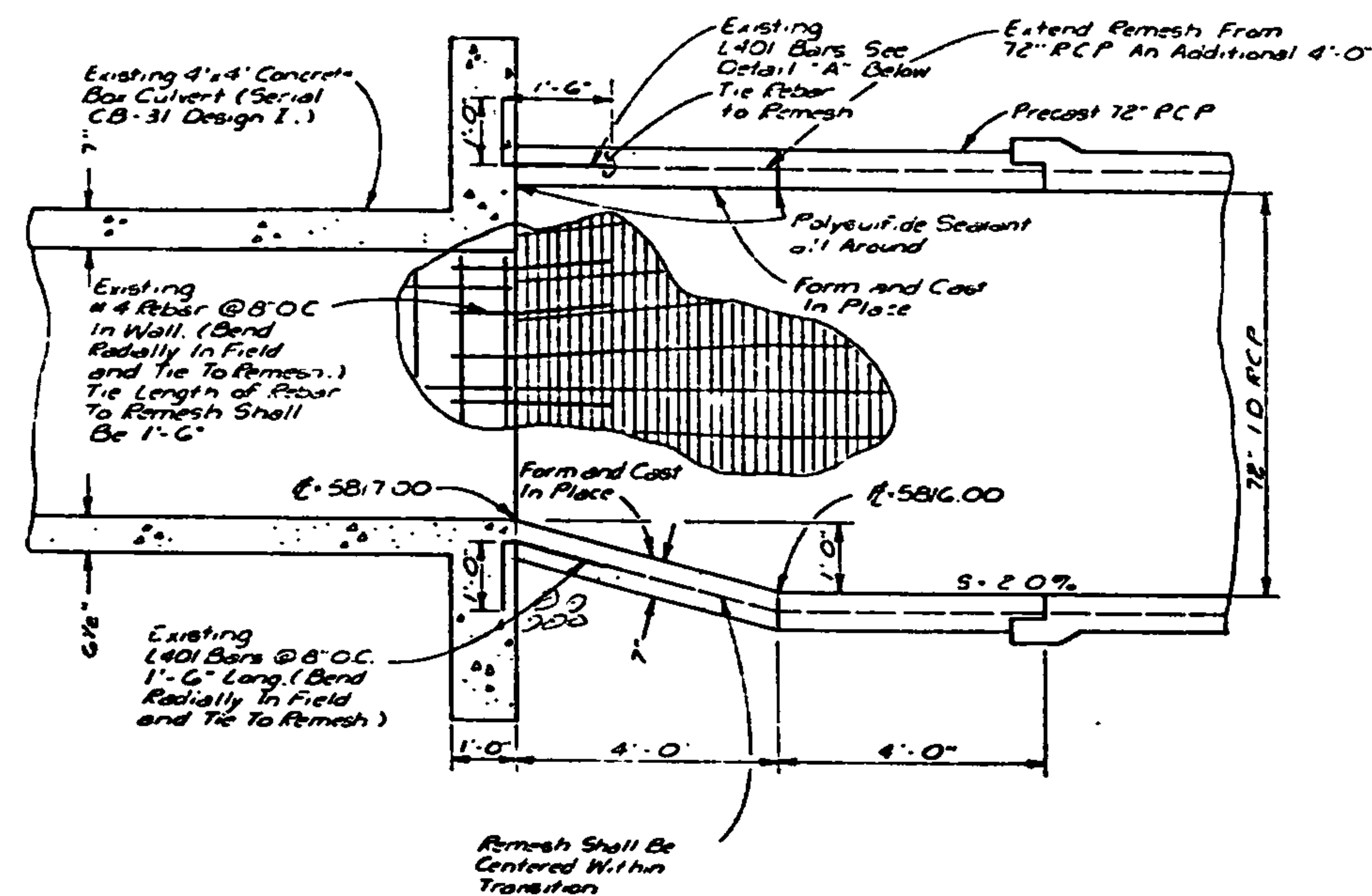
EXHIBIT C



PANEL 25 OF 50
FLOOD BOUNDARY AND
FLOODWAY MAP
CITY OF
ALBUQUERQUE,
NEW MEXICO
BERNALILLO COUNTY
COMMUNITY-PANEL NUMBER
350002 0025
EFFECTIVE DATE:
OCTOBER 14, 1983

EXHIBIT D

FMMA Region No:		11-4067 (3)	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		3-12	



	CITY OF ALBUQUERQUE	
TITLE: TRAMWAY BOULEVARD MENAUL BLVD. DRAINAGE IMPROVEMENTS		
APPROVALS	ENGINEER	DATE

F

H23-D161

D.R.B. Case No.
D.R.C. Project No.
Date Submitted

92-406

EXHIBIT "D"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD
REQUIRED INFRASTRUCTURE LISTING
FOR HIGH POINT SUBDIVISION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guarantee to be constructed for the above development.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
** 25' WIDE	RES. PAVING	HIGH POINT COURT	MENAIL BLVD.	~200' NORTH
4' WIDE	SIDEWALK (Both sides)	HIGH POINT COURT	MENAIL BLVD.	~200' NORTH
6"	WATER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
8"	SANITARY SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
18"	STORM SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
* SINGLE "D"	STORM INLET	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
N/A	STREET LIGHT	Par DPM HIGH POINT COURT		

* Must include an adequate overflow spillway for 100 year event or upsize SD. * inlet.
** Mountable C & G.

Signed By: [Signature]
Print Name: JACKIE S. McDOWELL
Firm: BRASHER ENGINEERING, INC.

*** Certification of Grading will be required prior to financial guarantee release.

This instructional Information may be deleted from official listings.	*Types may include Arterial Paving, Residential Paving, Water Line, Sanitary Sewer, Storm Sewer, Drainage Channel, Sidewalks, and Retaining Walls.
Use additional sheets as necessary to complete the listing. The final page must be signed by the preparer and provide signature nature spaces for DRB members, as illustrated.	Any non-standard design or waivers must be clearly described in this listing.
	If phased Platting is anticipated, a listing should be prepared for each proposed phase.

Development Review Board Member Approvals

<u>[Signature]</u> 3-02-93 Traffic Date	<u>Robert W. Kane</u> 3-2-93 PWD/UPD Date	<u>[Signature]</u> 3/2/93 Parks & Rec. Date
<u>[Signature]</u> 3/2/93 City Engineer/AMAFCA Date		<u>[Signature]</u> 3/2/93 DRB Chairman Date



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 20, 1994

Jackie McDowell, P.E.
McDowell Engineering, Inc.
7200 Valley Forge Pl. NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUBD (H-23/D16)
RECEIVED JANUARY 18, 1994 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 1-14-94

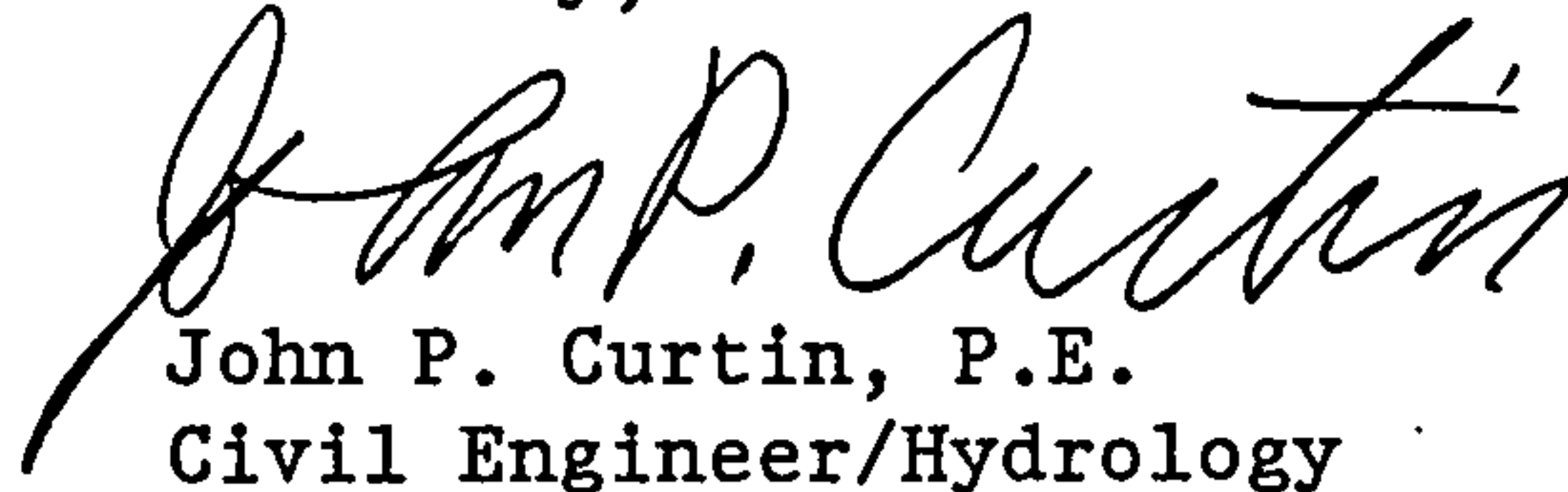
Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology releases the Financial Guaranty for this project.

The City Construction Division must also accept Project # 4618.90 before Lynda-Michelle will release the Financial Guaranty for this project.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,


John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Lynda-Michelle DeVanti - Project # 4618.90
John Mechenbier, 6801 Palomas Ave. NE 87109

WPHYD/7461/jpc

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HIGH POINT SUB'D ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: _____ WORK ORDER #: 4618.90
LEGAL DESCRIPTION: HIGH POINT SUBDIVISION
CITY ADDRESS: 12777 MENAUL BLVD. NE
ENGINEERING FIRM: MCDOWELL ENGINEERING, INC. CONTACT: JACKIE MCDOWELL
ADDRESS: 7200 VALLEY FORGE PL. NE PHONE: 828-2430
OWNER: JOHN MECHENBIER CONTACT: JOHN MECHENBIER
ADDRESS: 6801 PALOMAS AVE. NE PHONE: 828-1676
ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: PCS CONTACT: BERNIE SEITZ
ADDRESS: 2400 JUAN TABO NE, SUITE G-121 PHONE: 294-2609
CONTRACTOR: SUNDANCE MECHANICAL CONTACT: MIKE MECHENBIER
ADDRESS: 5920 MIDWAY PLACE NE PHONE: 345-2694

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAIN. PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

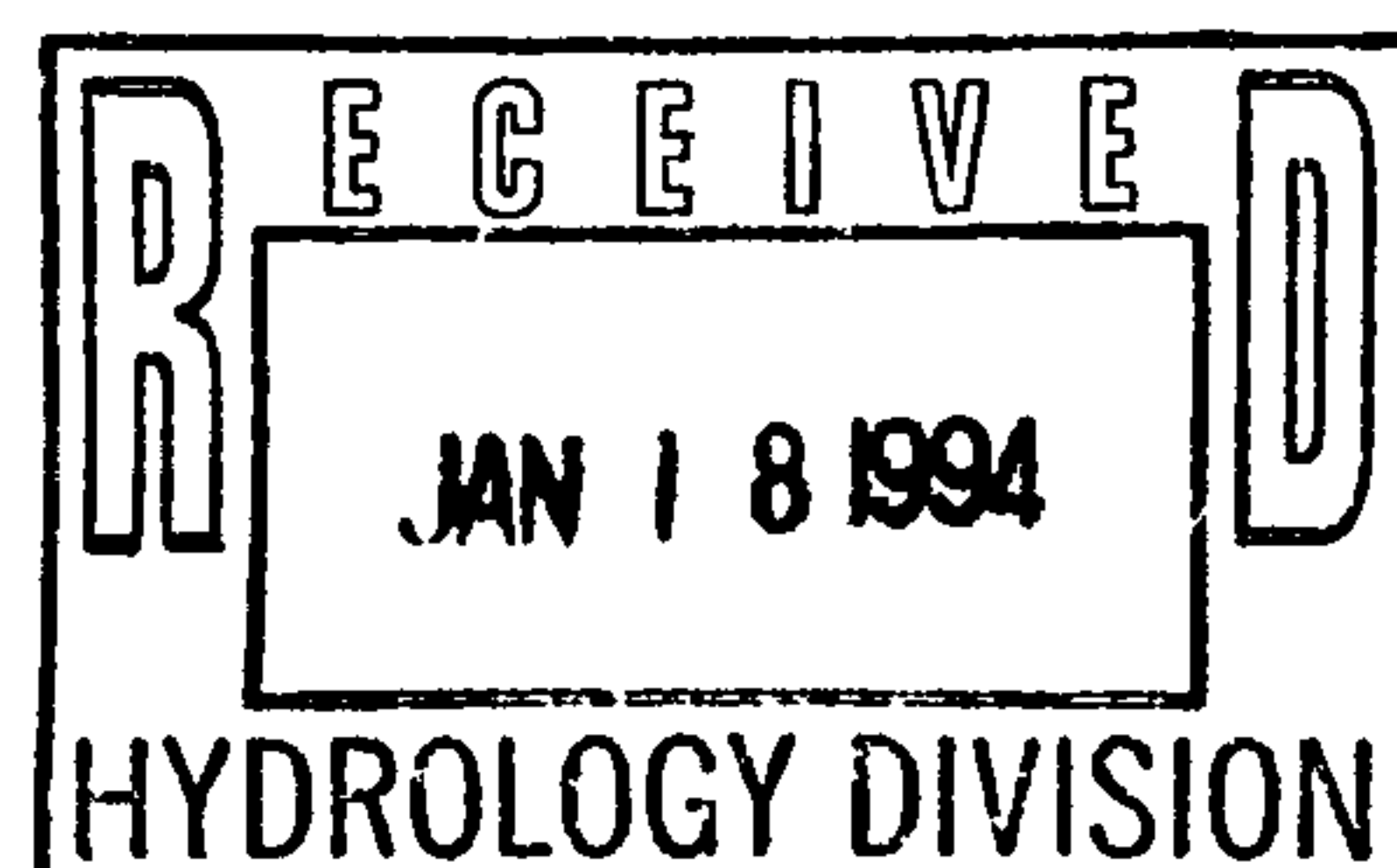
☒ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S.DEV PLAN FOR SUB'D APPROVAL
☐ S.DEV PLAN FOR BLDG PMT APPR.
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERT. OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☒ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: JANUARY 14, 1994

BY: JACKIE S. MCDOWELL, P.E.



McDowell Engineering, Inc.

Jackie Sedillo McDowell, P.E.
Civil Engineering Consultant

January 14, 1994

Mr. John P. Curtin, P.E.
City of Albuquerque
PWD/Hydrology
P.O. Box 1293
Albuquerque, NM 87103

**RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUB'D (H-23/D16)
REVISED STAMPED & DATED 01-14-94**

Dear Mr. Curtin:

In response to our telephone conversation of January 14, 1994, I offer the following:

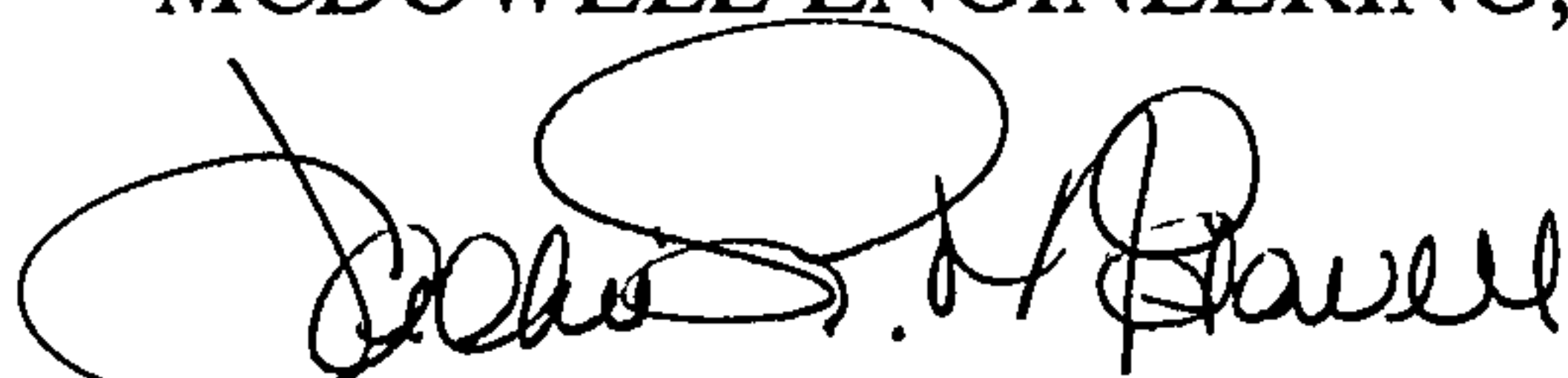
1. Retaining walls have been constructed at the locations you were concerned about and are shown on the revised plan.
2. The Lot numbers have been added to the revised plan.
3. The as-built finished floor and pad elevations have been added to the revised plan.
4. The engineer's certification note has been added to the revised plan.
5. The word "new" has been replaced with "proposed" on the revised plan.

I trust that this extensive additional information will satisfy your requirements to release the developers financial guarantees for the development. The construction has been complete for 4 months and the developer has had to extend his financial guarantees to produce this information for you.

Your timely acceptance of this Engineer's Certification is greatly appreciated.

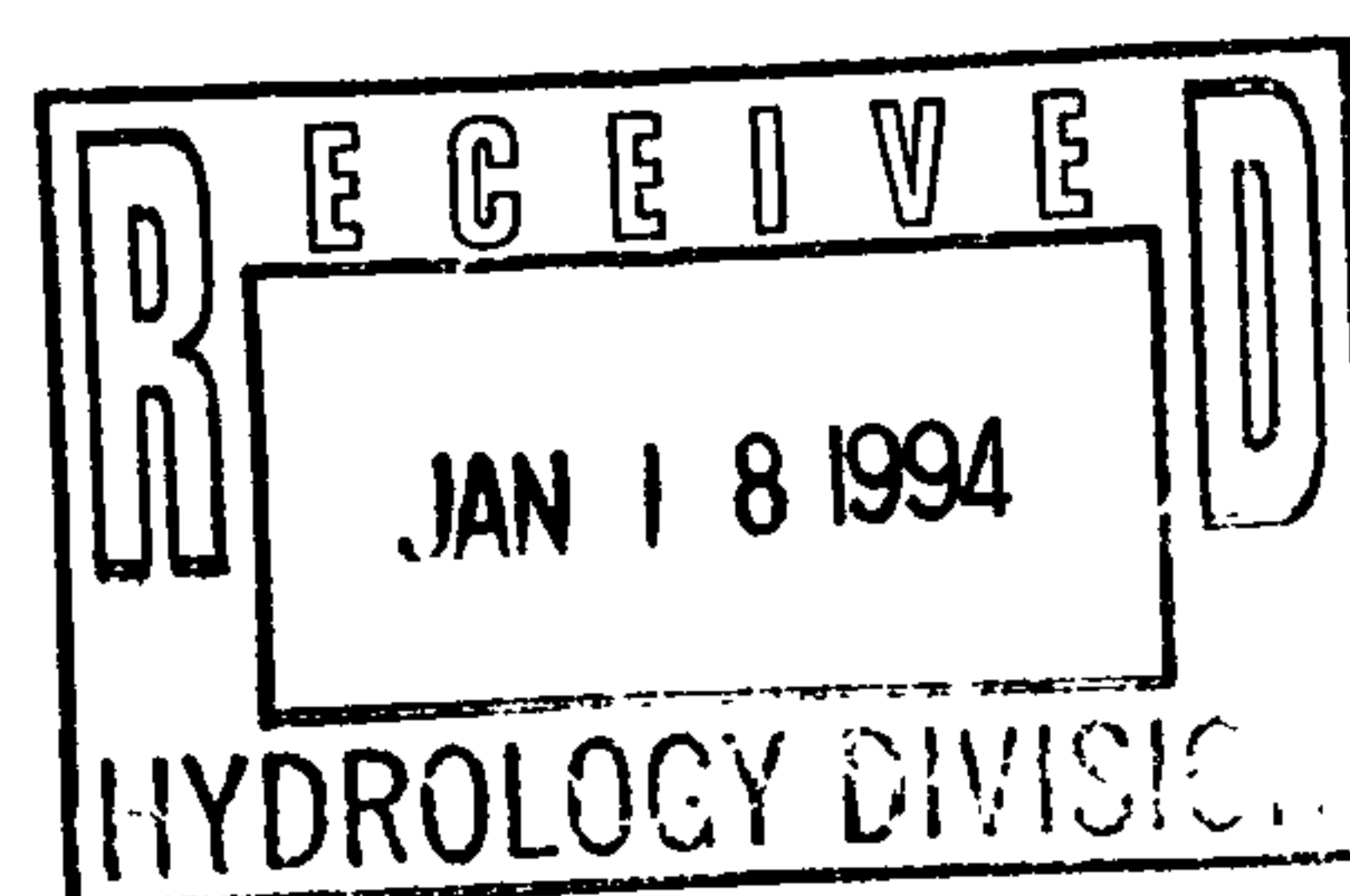
Sincerely,

MCDOWELL ENGINEERING, INC.



Jackie S. McDowell, P.E.

cc: Mechenbier Construction, Inc.





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 14, 1994.

Jackie McDowell, P.E.
McDowell Engineering, Inc.
7200 Valley Forge Pl. NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUBD (H-23/D16)
RECEIVED DECEMBER 28, 1993 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 12-27-93

Dear Ms. McDowell:

The Legal Department has informed me that:

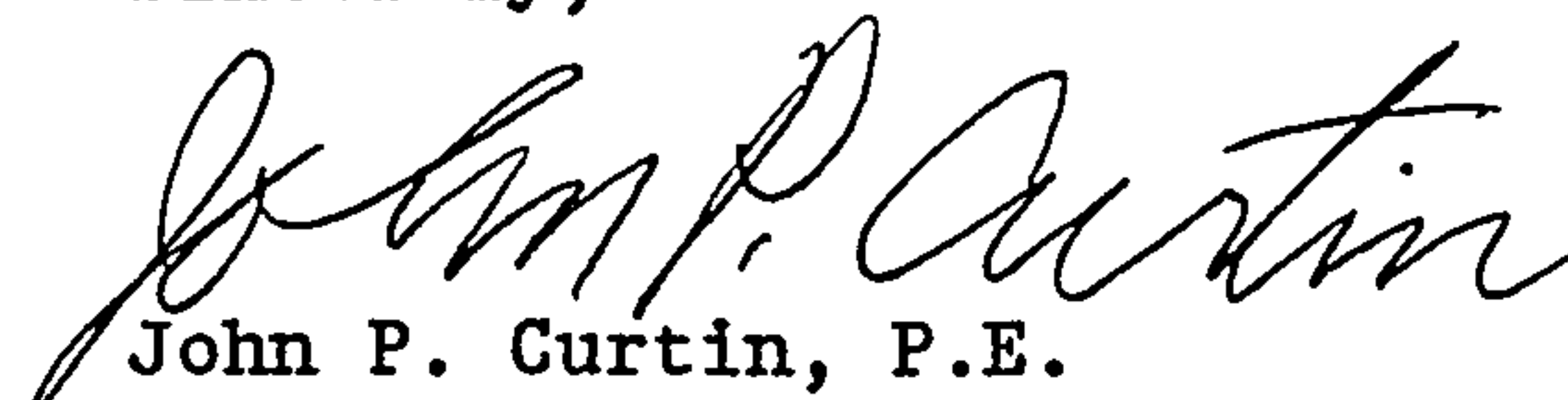
"Drainage & Grading Certification cannot be partial or qualified. It must be a complete and total acceptance of the grading & drainage certification."

Based on this City Hydrology requires that you provide as-built pad elevations for each lot.

In our conversation this morning, you indicated that the Developer has decided to use a retaining wall on Lot 9. Therefore as-built information will be required for this wall. Your Certification statement should explain the reason for this change.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,


John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Lynda-Michelle DeVanti - Project # 4618.90
John Mechenbier, 6801 Palomas Ave. NE 87109

WPHYD/7461/jpc

PUBLIC WORKS DEPARTMENT

LEGAL DEPARTMENT

CITY OF ALBUQUERQUE

NEW MEXICO

Date: 11/2/94
To: L. Michelle
From: V. Curran
About: High Point Subd. 4618.30

- ☐ Review and Comment
- ☐ For Your Information
- ☐ Note and See Me
- ☒ Necessary Action

- ☐ Note and Return
- ☐ Per conversation
- ☐ As requested
- ☐ Read and File

1. Drainage and Grading
Certification cannot be partial
or qualified. It must be a
complete and total acceptance
of the grading & drainage
certification. (orange tag).



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 4, 1994

Jackie McDowell, P.E.
McDowell Engineering, Inc.
7200 Valley Forge Pl. NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUBD (H-23/D16),
RECEIVED DECEMBER 28, 1993 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 12-27-93

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology releases the Financial Guaranty for this project. The City Construction Division must also accept Project # 4618.90 before Lynda-Michelle will release the Financial Guaranty for this project.

BE AWARE that the Building Pads have not been graded at this time. The Building Contractor must be responsible for providing positive drainage away from each house.

ALSO BE AWARE that Lot 9 will require additional work when the house is constructed. If the house is constructed at the proposed finished floor elevation, significant fill will be required. If the house is constructed near the as-built elevation, a retaining wall will be required on the property line with the 7-11 Store.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,


John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Lynda-Michelle DeVanti - Project # 4618.90
John Mechenbier, 6801 Palomas Ave. NE 87109

WPHYD/7461/jpc

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

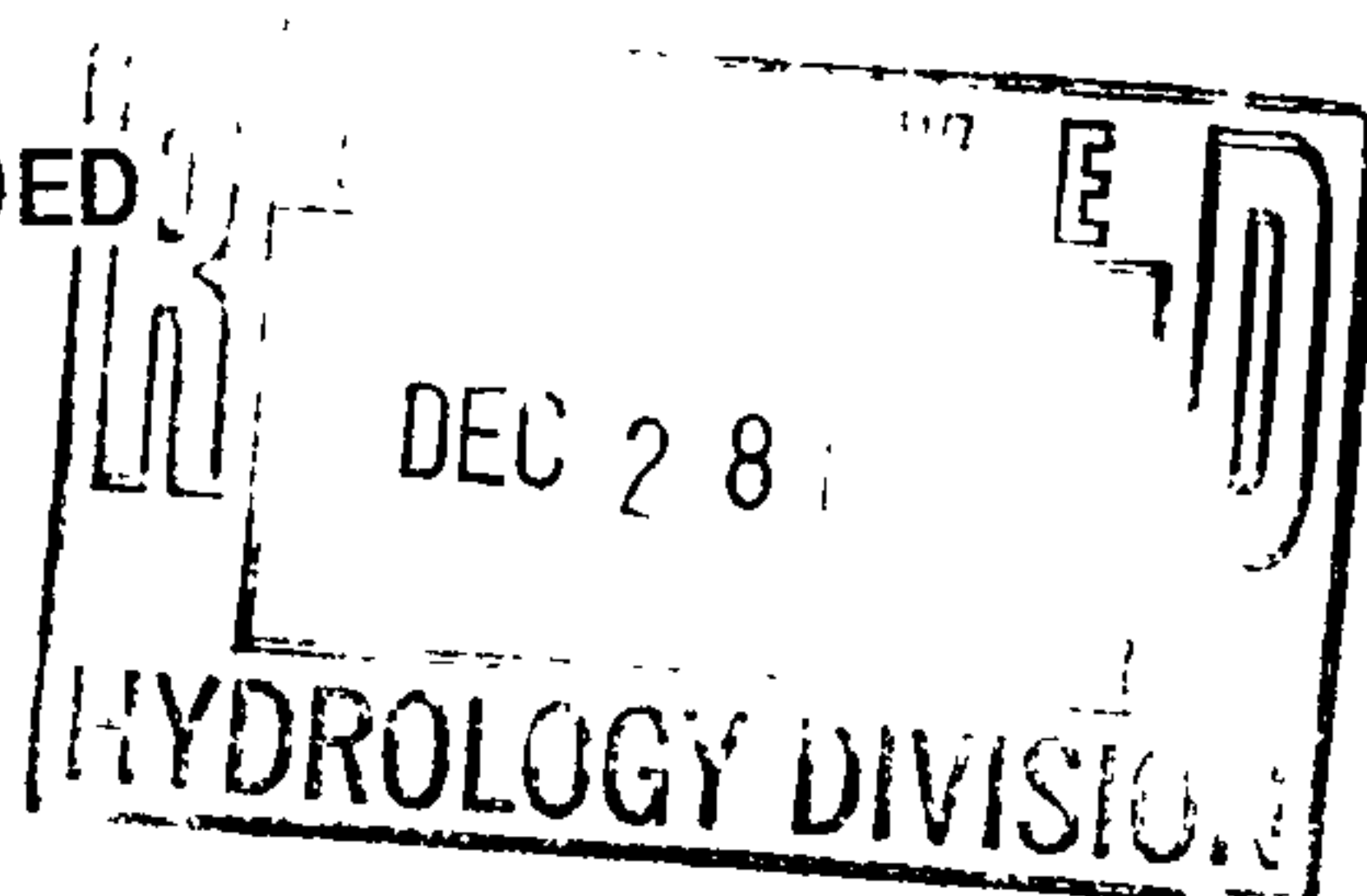
PROJECT TITLE: HIGH POINT SUB'D ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: _____ WORK ORDER #: 4618.90
LEGAL DESCRIPTION: TRACT B-2, SPROUL SECURITY SUBDIVISION
CITY ADDRESS: 12777 MENAUL BLVD. NE
ENGINEERING FIRM: MCDOWELL ENGINEERING, INC. CONTACT: JACKIE MCDOWELL
ADDRESS: 7200 VALLEY FORGE PL. NE PHONE: 828-2430
OWNER: JOHN MECHENBIER CONTACT: JOHN MECHENBIER
ADDRESS: 6801 PALOMAS AVE. NE PHONE: 828-1676
ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: PCS CONTACT: BERNIE SEITZ
ADDRESS: 2400 JUAN TABO NE, SUITE G-121 PHONE: 294-2609
CONTRACTOR: SUNDANCE MECHANICAL CONTACT: MIKE MECHENBIER
ADDRESS: 5920 MIDWAY PLACE NE PHONE: 345-2694

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAIN. PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

☒ YES
☐ NO
☐ COPY PROVIDED



DATE SUBMITTED: DECEMBER 27, 1993

BY: JACKIE S. MCDOWELL, P.E.

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S.DEV PLAN FOR SUB'D APPROVAL
☐ S.DEV PLAN FOR BLDG PMT APPR.
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERT. OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☒ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

McDowell Engineering, Inc.

Jackie Sedillo McDowell, P.E.
Civil Engineering Consultant

December 27, 1993

Mr. John P. Curtin, P.E.
City of Albuquerque
PWD/Hydrology
P.O. Box 1293
Albuquerque, NM 87103

**RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUB'D (H-23/D16)
REVISED STAMPED & DATED 12-27-93**

Dear Mr. Curtin:

In response to our telephone conversation of November 22, 1993 and Mr. Fred Aguirre's comments at the DRB Hearing for modified elevations over 18", I offer the following:

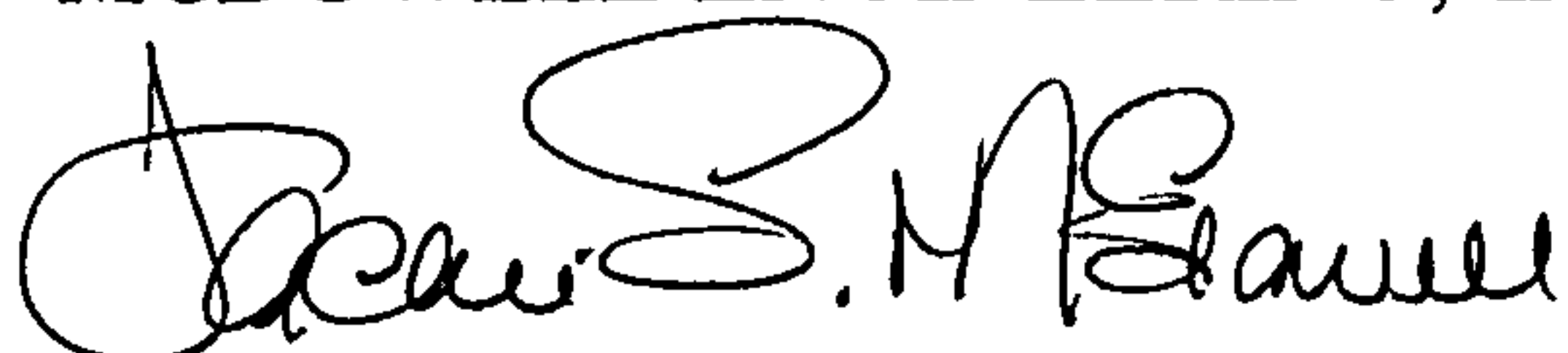
1. Per Enactment No. 2-1993, this project went before the City of Albuquerque Design Review Board (DRB) on Tuesday, November 16, 1993 for approval of the "as-built" grading plan. All departments approved of the modifications to the grading. Mr. Aguirre requested that we do additional "as-built" survey elevations to verify that slopes are not exceeded. We have performed a detailed "as-built" survey of the property to verify this request. There are no slopes that exceed a 3:1.
2. Per our telephone conversation of November 22, 1993, we have added basin lines indicating the direction of flows for the development. These basins are in accordance with the original approved grading and drainage plan.

I trust that this extensive additional information will satisfy your requirements to release the developers financial guarantees for the development. The construction has been complete for 4 months and the developer has had to extend his financial guarantees to produce this information for you.

Your timely acceptance of this Engineer's Certification is greatly appreciated.

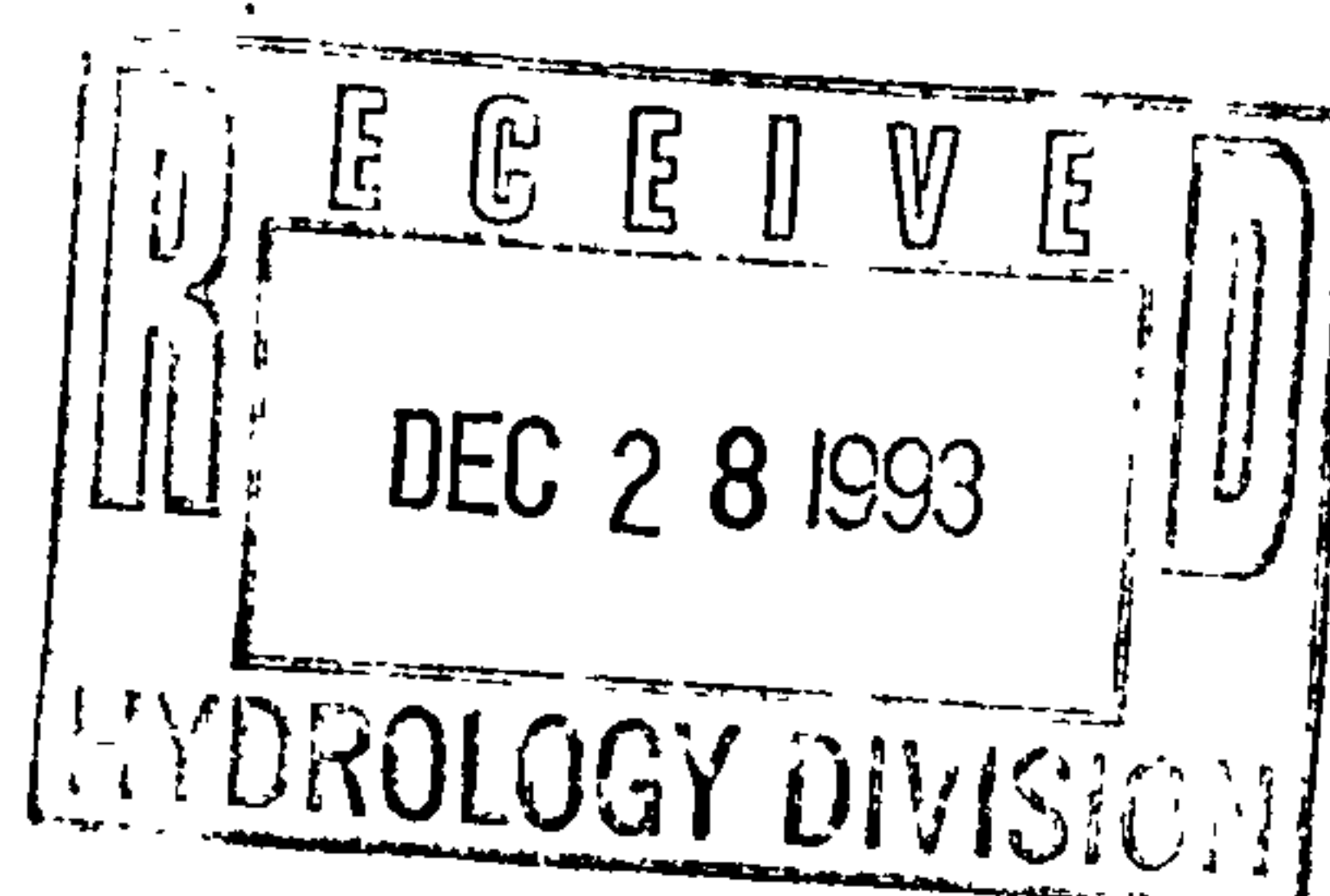
Sincerely,

MCDOWELL ENGINEERING, INC.



Jackie S. McDowell, P.E.

cc: Mechenbier Construction, Inc.



CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT/ENGINEERING GROUP

DRB CASE NO.: DRB-92-406;V-93-22;

AGENDA ITEM NO.: 4

SUBJECT:

<u> </u> (01) Sketch Plat	<u> </u> (02) Bulk Land Variance	<u> </u> (03) Sidewalk Variance
<u> </u> (04) Preliminary Plat	<u> </u> (05) S. Dev. for Subd.	<u> </u> (06) S. Dev. for B.P.
<u> </u> (07) Vacation	<u> </u> (08) Final Plat	<u> </u> (09) Infrastructure List
<u> </u> (10) Sector Dev Plan	<u> X </u> (11) Other <u>Final grade</u>	

ACTION REQUESTED: REV/CMT; X APP; SIGN-OFF; EXTN; AMEND

ENGINEERING COMMENTS:

1. A revised grading plan will be required for approval of the subject request. This plan will need to address retaining wall requirements and drainage basin changes.

RESOLUTION:

APPROVED 1 ; DENIED ; DEFERRED ; COMMENTS PROVIDED ; WITHDRAWN
SIGNED-OFF: (SDPS) (FP) (SDPBP) (SP) BY: (WUD) (CE) (TRANS) (PRKS) (PLNG)
DELEGATED: (SDPS) (FP) (SDPBP) (SP) TO: (WUD) (CE) (TRANS) (PRKS) (PLNG)
FOR:

SIGNED: Fred J. Aguirre, P.E.
City Engineer/AMAFCA Designee

DATE: November 16 1993

Fred asked Jackie
to resubmit based on
verbal comments at
the DRB 11-16-93.

JPC 11-22-93

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HIGH POINT SUB'D ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: _____ WORK ORDER #: 4618.90
LEGAL DESCRIPTION: TRACT B-2, SPROUL SECURITY SUBDIVISION
CITY ADDRESS: 12777 MENAUL BLVD. NE
ENGINEERING FIRM: MCDOWELL ENGINEERING, INC. CONTACT: JACKIE MCDOWELL
ADDRESS: 7200 VALLEY FORGE PL. NE PHONE: 828-2430
OWNER: JOHN MECHENBIER CONTACT: JOHN MECHENBIER
ADDRESS: 6801 PALOMAS AVE. NE PHONE: 828-1676
ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: PCS CONTACT: BERNIE SEITZ
ADDRESS: 2400 JUAN TABO NE, SUITE G-121 PHONE: 294-2609
CONTRACTOR: SUNDANCE MECHANICAL CONTACT: MIKE MECHENBIER
ADDRESS: 5920 MIDWAY PLACE NE PHONE: 345-2694

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAIN. PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

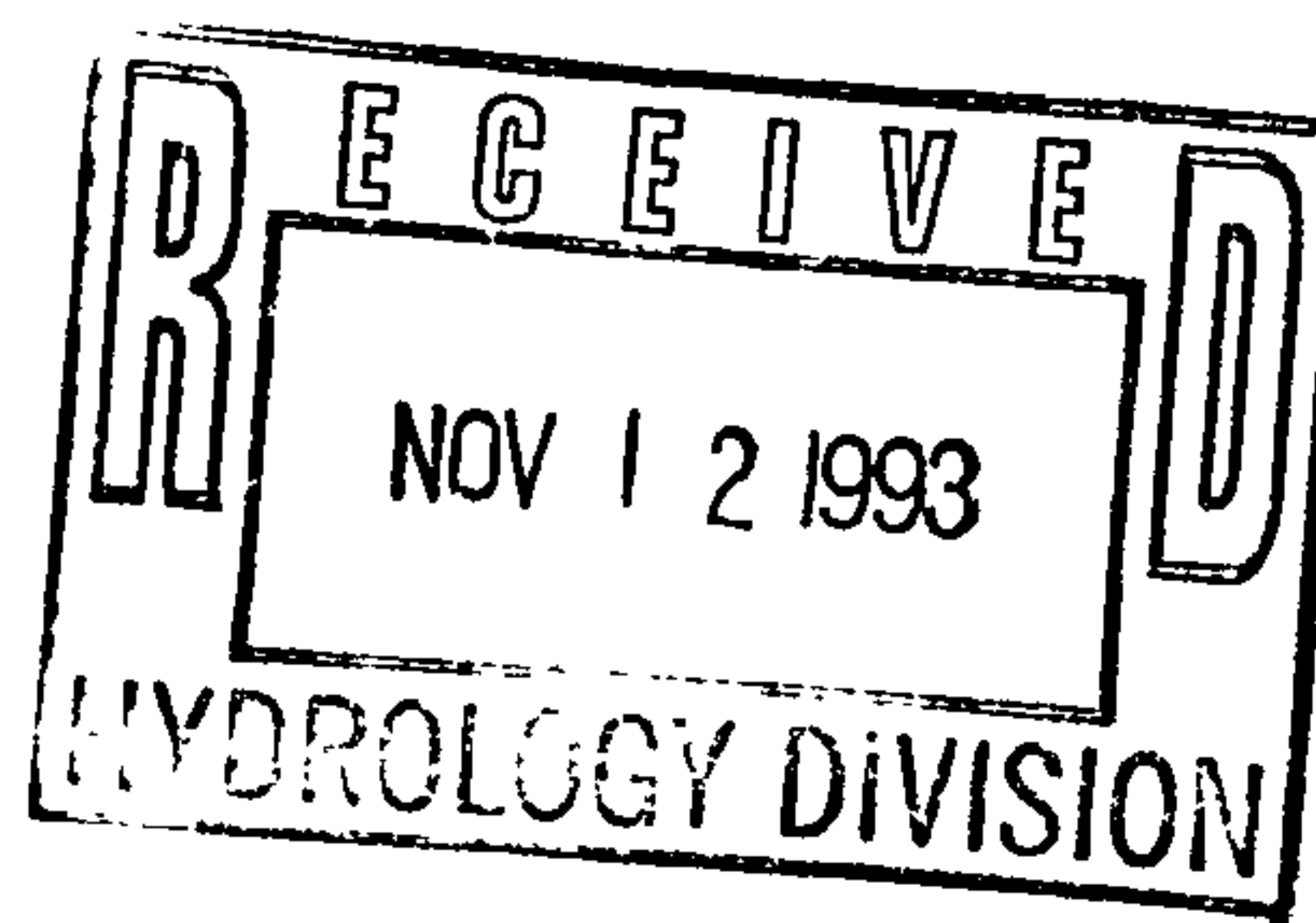
☒ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S.DEV PLAN FOR SUB'D APPROVAL
☐ S.DEV PLAN FOR BLDG PMT APPR.
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERT. OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☒ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: NOVEMBER 11, 1993

BY: JACKIE S. MCDOWELL, P.E.



McDowell Engineering, Inc.

Jackie Sedillo McDowell, P.E.
Civil Engineering Consultant

November 11, 1993

Mr. John P. Curtin, P.E.
City of Albuquerque
PWD/Hydrology
P.O. Box 1293
Albuquerque, NM 87103

**RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUB'D (H-23/D16)
REVISED STAMPED & DATED 11-11-93**

Dear Mr. Curtin:

In response to your letter dated October 29, 1993, I offer the following:

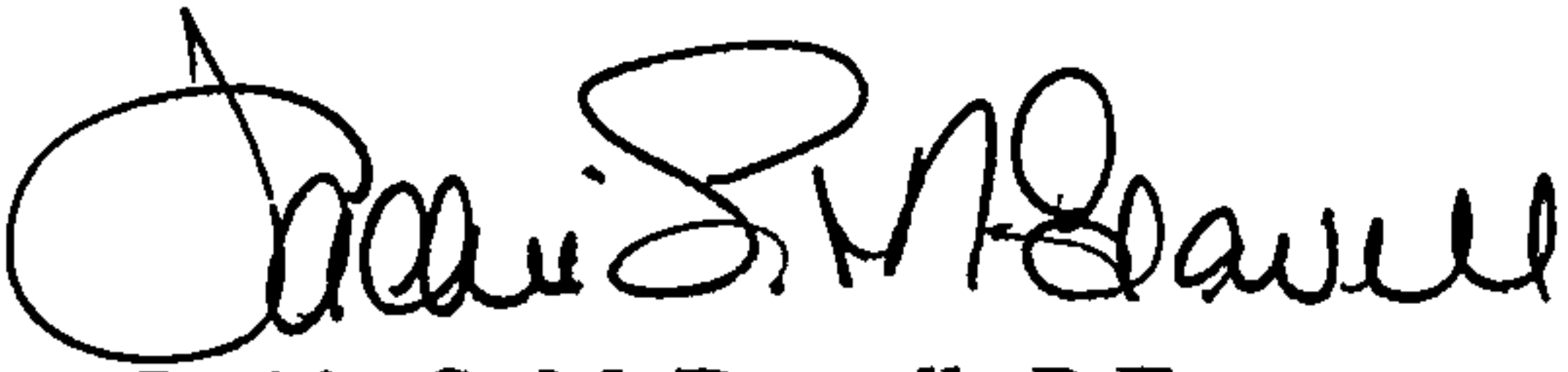
Per Enactment No. 2-1993, this project is scheduled to go before the City of Albuquerque Design Review Board (DRB) on Tuesday, November 16, 1993 for approval of the "as-built" grading plan.

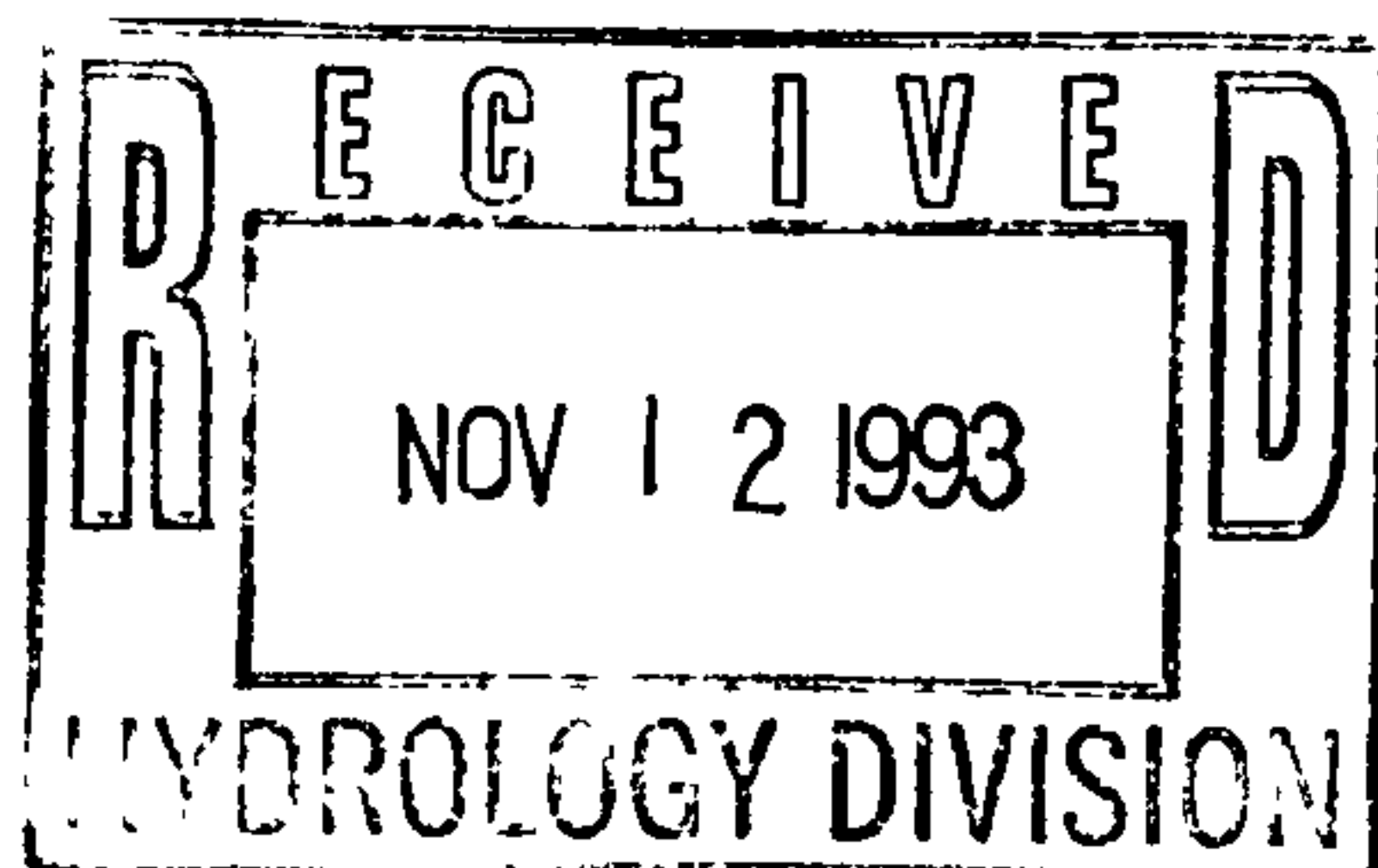
Additional "as-built" spot elevations have also been added around the site in accordance with your letter.

Your timely acceptance of this Engineer's Certification is greatly appreciated.

Sincerely,

MCDOWELL ENGINEERING, INC.


Jackie S. McDowell, P.E.





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 29, 1993

Jackie McDowell, P.E.
McDowell Engineering, Inc.
7200 Valley Forge Pl. NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR HIGH POINT SUBD (H-23/D16)
ENGINEER'S STAMP DATED 10-19-93
RECEIVED OCTOBER 20, 1993 FOR DRAINAGE REQUIREMENTS

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology REJECTS the Engineer's Certification for this project.

Enactment No. 2-1993, approved January 13, 1993 states "Grade changes within 50 feet of the boundary of a subdivision, which grade changes are greater than 18 inches between the preliminary plat grading plan and the final grading plan, will require Development Review Board approval at a meeting with public notice equal to that of the preliminary plat hearing." City Hydrology interprets this to mean that if the grades at the subdivision boundary on the Engineer's Certification are different than the grades on the Plan for preliminary plat by more than 18" then DRB needs to approve the grade changes as outlined in the Enactment.

Since three of the grades along the boundary with the Piedra Lisa Channel have changed by 24" you must schedule DRB approval. Furthermore City Hydrology requires a minimum of one spot elevation at the rear of the lot, the finished floor elevation, and a top of curb elevation for each lot. This is especially important for this project because one of the finished floor elevations has changed 3'.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,


John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Jack Cloud, Planning
Fred Aguirre, DRB
Alan Martinez, Permits

WPHYD/7461/jpc

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HIGH POINT SUB'D ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: WORK ORDER #: 4618.90
LEGAL DESCRIPTION: TRACT B-2, SPROUL SECURITY SUBDIVISION
CITY ADDRESS: 12777 MENAUL BLVD. NE
ENGINEERING FIRM: MCDOWELL ENGINEERING, INC. CONTACT: JACKIE MCDOWELL
ADDRESS: 7200 VALLEY FORGE PL. NE PHONE: 828-2430
OWNER: JOHN MECHENBIER CONTACT: JOHN MECHENBIER
ADDRESS: 6801 PALOMAS AVE. NE PHONE: 828-1676
ARCHITECT: N/A CONTACT:
ADDRESS: PHONE:
SURVEYOR: PCS CONTACT: BERNIE SEITZ
ADDRESS: 2400 JUAN TABO NE, SUITE G-121 PHONE: 294-2609
CONTRACTOR: SUNDANCE MECHANICAL CONTACT: MIKE MECHENBIER
ADDRESS: 5920 MIDWAY PLACE NE PHONE: 345-2694

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAIN. PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

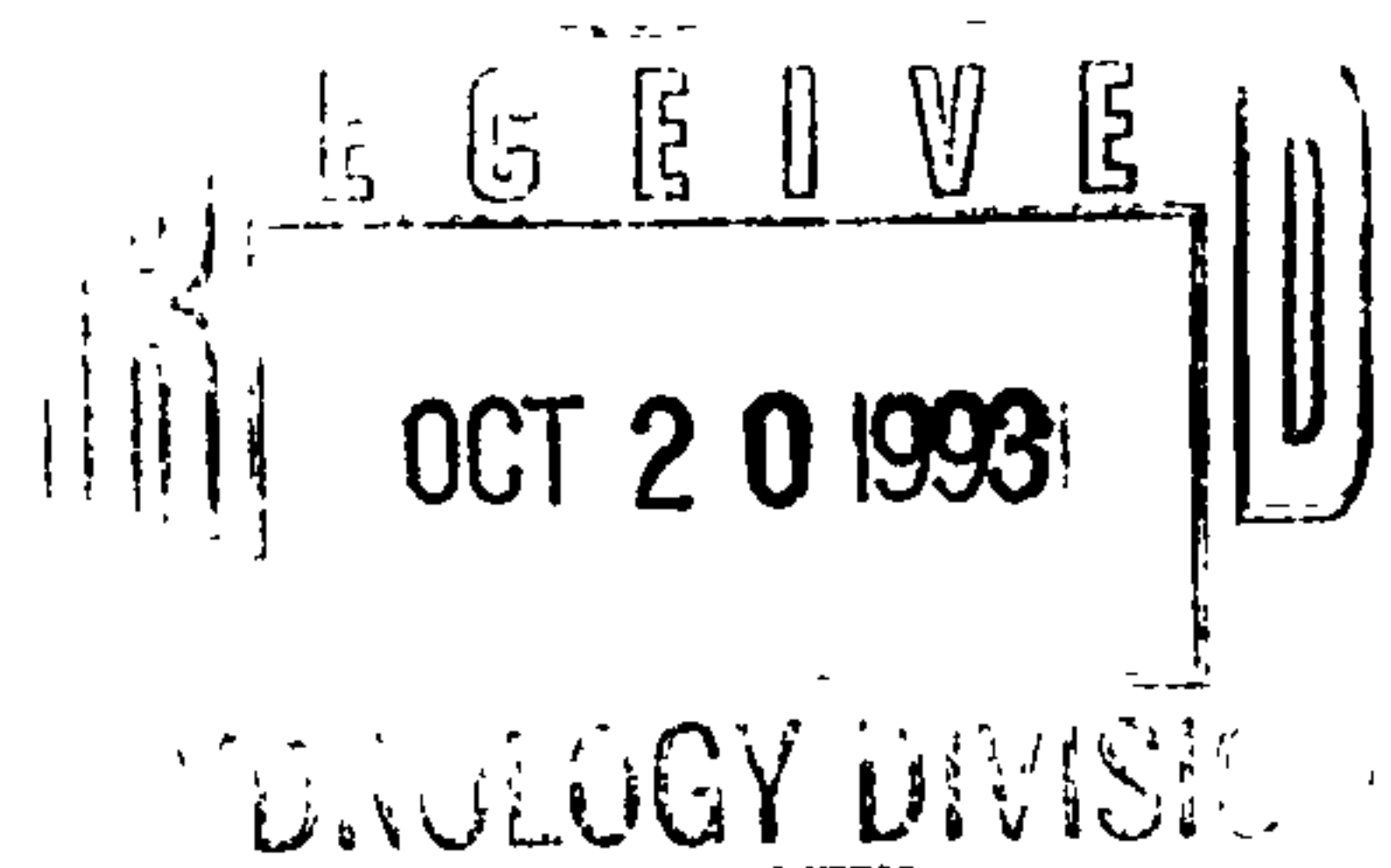
☒ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S.DEV PLAN FOR SUB'D APPROVAL
☐ S.DEV PLAN FOR BLDG PMT APPR.
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERT. OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☒ DRAINAGE REQUIREMENTS
☐ OTHER (SPECIFY)

DATE SUBMITTED: OCTOBER 20, 1993

BY: JACKIE S. MCDOWELL, P.E.



DRAINAGE INFORMATION SHEET

PROJECT TITLE: HIGH POINT SUB'D ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: _____ WORK ORDER #: 4618.90
LEGAL DESCRIPTION: TRACT B-2, SPROUL SECURITY SUBDIVISION
CITY ADDRESS: 12777 MENAUL BLVD. NE
ENGINEERING FIRM: BRASHER ENGINEERING, INC. CONTACT: JACKIE MCDOWELL
ADDRESS: 11930 MENAUL BLVD. NE STE # 113 PHONE: 296-0422
OWNER: JOHN MECHENBIER CONTACT: JOHN MECHENBIER
ADDRESS: 6801 PALOMIS AVE. NE PHONE: 828-1676
ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: PCS CONTACT: BERNIE SEITZ
ADDRESS: 2400 JUAN TABO NE, SUITE G-121 PHONE: 822-8532
CONTRACTOR: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

CHECK TYPE OF APPROVAL SOUGHT:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAIN. PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☒ OTHER For Rough Grading Approval
Please Sign Paper Plot - White Sheet.

PRE-DESIGN MEETING:

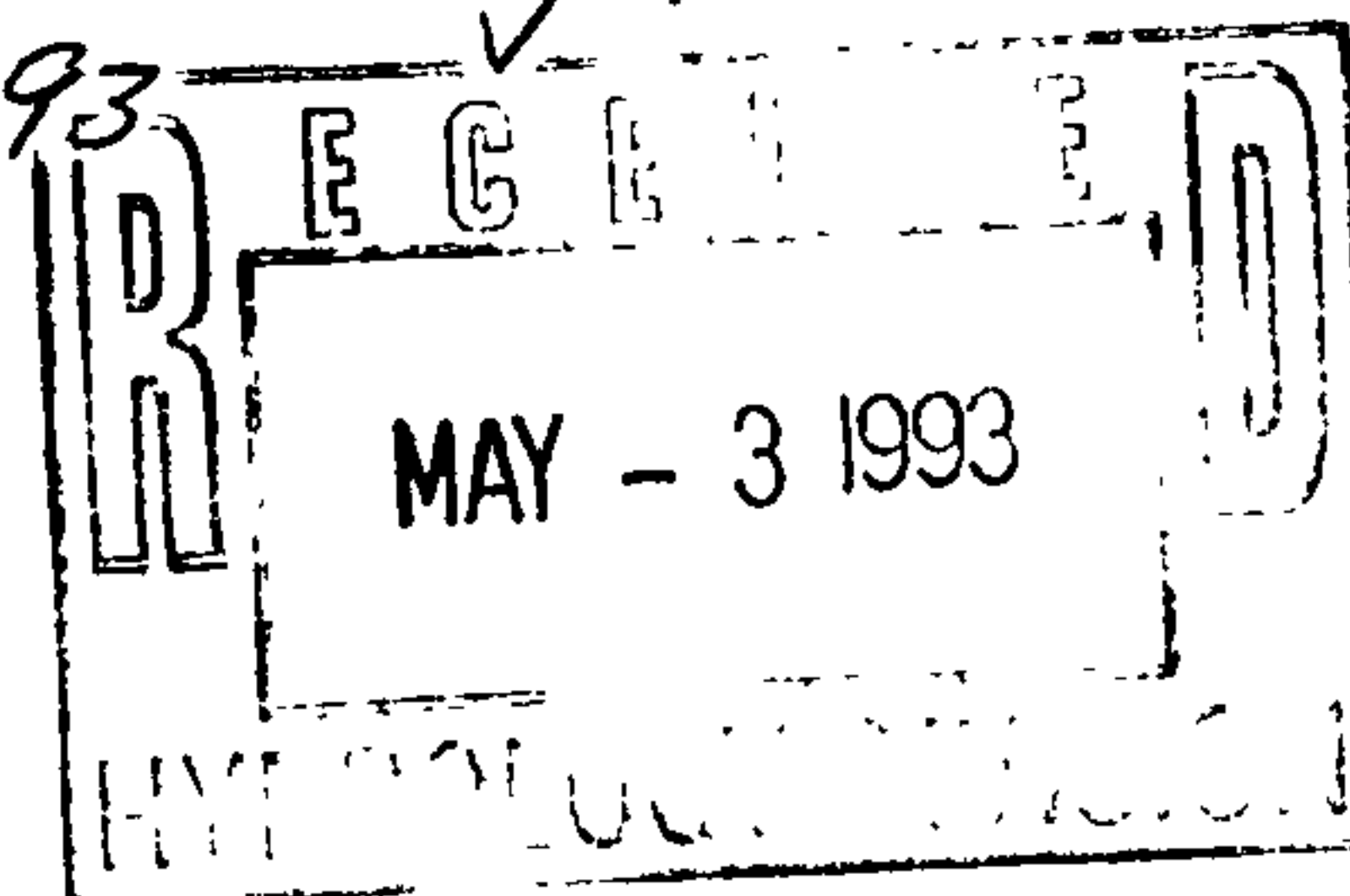
☒ YES
☐ NO
☐ COPY PROVIDED

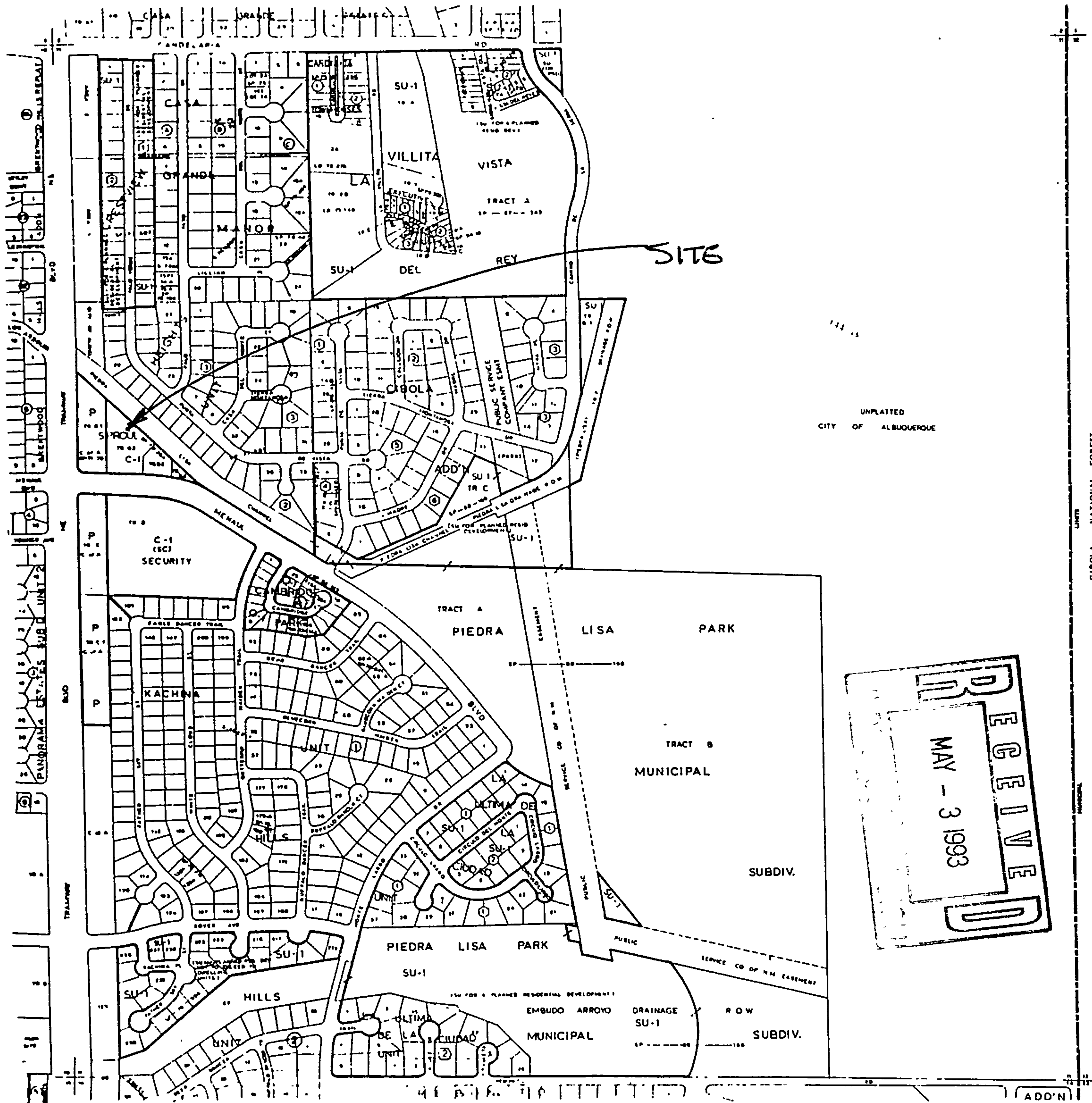
☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S.DEV PLAN FOR SUB'D APPROVAL
☐ S.DEV PLAN FOR BLDG PMT APPR.
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERT. OF OCCUPANCY APPROVAL
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: MAY 3, 1993

BY: JACKIE S. MCDOWELL, P.E.

Rough Grading Plan
Signed 5-3-93
by JAC





100 200 300 400
SCALE

LEGAL DESCRIPTION
T 10 N
R 4 E
SEC. 11

UNIFORM PROPERTY CODE
1-875-000

MAP AND VES THROUGH
AUGUST 1991

H-23-Z



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 28, 1993

Jackie McDowell, P.E.
Brasher Engineering, Inc.
11930 Menqul Blvd. Suite 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR HIGH POINT SUBD (H-23/D16)
STAMPED & DATED 4-8-93; RECEIVED APRIL 22, 1993
FOR PRELIMINARY/FINAL PLAT & BUILDING PERMIT APPROVAL

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary Plat, Final Plat & Building Permit.

The Grading & Drainage Plan must be included in the set of construction documents that you submit for Building Permit.

Engineer's certification of grades per DPM checklist must be approved before the Financial Guaranty will be released.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin
John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Alan Martinez, Permits

WPHYD+7461;jpc

*Ed Elwell has requested
that 3 blocks are removed
at spillway to provide
prevent clogging.
10-6-93*

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: High Point Subdivision ZONE ATLAS/DRNG. FILE #: H-23/D16
 DRB #: 92-406 EPC #: N/A WORK ORDER #: 4618.90
 LEGAL DESCRIPTION: Tract B-2 Sprawl Security Subdivision
 CITY ADDRESS: N/A
 ENGINEERING FIRM: BLASHER ENGINEERING, INC CONTACT: Jackie McDowell
 ADDRESS: 11930 Menaul Blvd. NE Ste #113 PHONE: 296-0422
 OWNER: John Mechenbier CONTACT: John Mechenbier
 ADDRESS: P.O. Box 90938 PHONE: 828-1676
 ARCHITECT: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____
 SURVEYOR: P.C.S. CONTACT: Bernie Sitty
 ADDRESS: 2400 Juan Tabo NE PHONE: 822-8532
 CONTRACTOR: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
 ____ DRAINAGE PLAN
 ____ CONCEPTUAL GRADING & DRAINAGE PLAN
 ____ GRADING PLAN
 ____ EROSION CONTROL PLAN
 ____ ENGINEER'S CERTIFICATION
☒ OTHER Update Approved G & D Plan

PRE-DESIGN MEETING:

☒ YES
 ____ NO
 ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
☒ PRELIMINARY PLAT APPROVAL
 ____ S. DEV. PLAN FOR SUB'D. APPROVAL
 APR 29 1993 DEV. PLAN FOR BLDG. PERMIT APPROVAL
 ____ SECTOR PLAN APPROVAL
☒ FINAL PLAT APPROVAL
 ____ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
 ____ CERTIFICATE OF OCCUPANCY APPROVAL
 ____ GRADING PERMIT APPROVAL
 ____ PAVING PERMIT APPROVAL
 ____ S.A.D. DRAINAGE REPORT
 ____ DRAINAGE REQUIREMENTS
☒ OTHER Update Approval (SPECIFY)

DATE SUBMITTED:

4-22-93
 BY: Jackie McDowell

**BRASHER
ENGINEERING
INC.**

April 21, 1993

Mr. John P. Curtin, P.E.
City of Albuquerque
PWD/Hydrology
P.O. Box 1293
Albuquerque, NM 87103

**RE: DRAINAGE REPORT UPDATE FOR HIGH POINT SUBDIVISION (H-23/D16)
STAMPED & DATED 4-8-93**

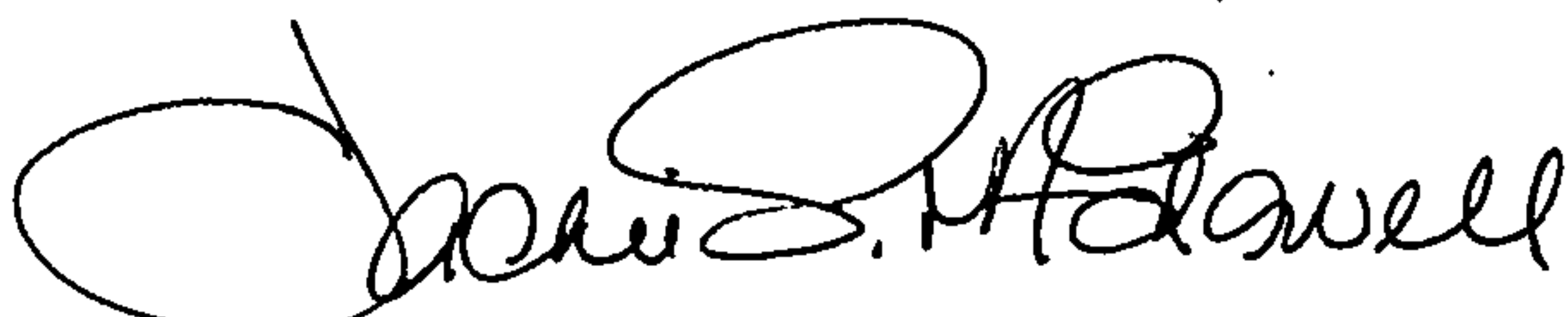
Dear Mr. Curtin:

Enclosed are updated Exhibits E, F, and G to replace the Exhibits included with the February 15, 1993 submittal. These updated Exhibits include modifications made to the plans required by the Design Review Committee (DRC). Also enclosed is the calculation for the overflow at the west end of the property.

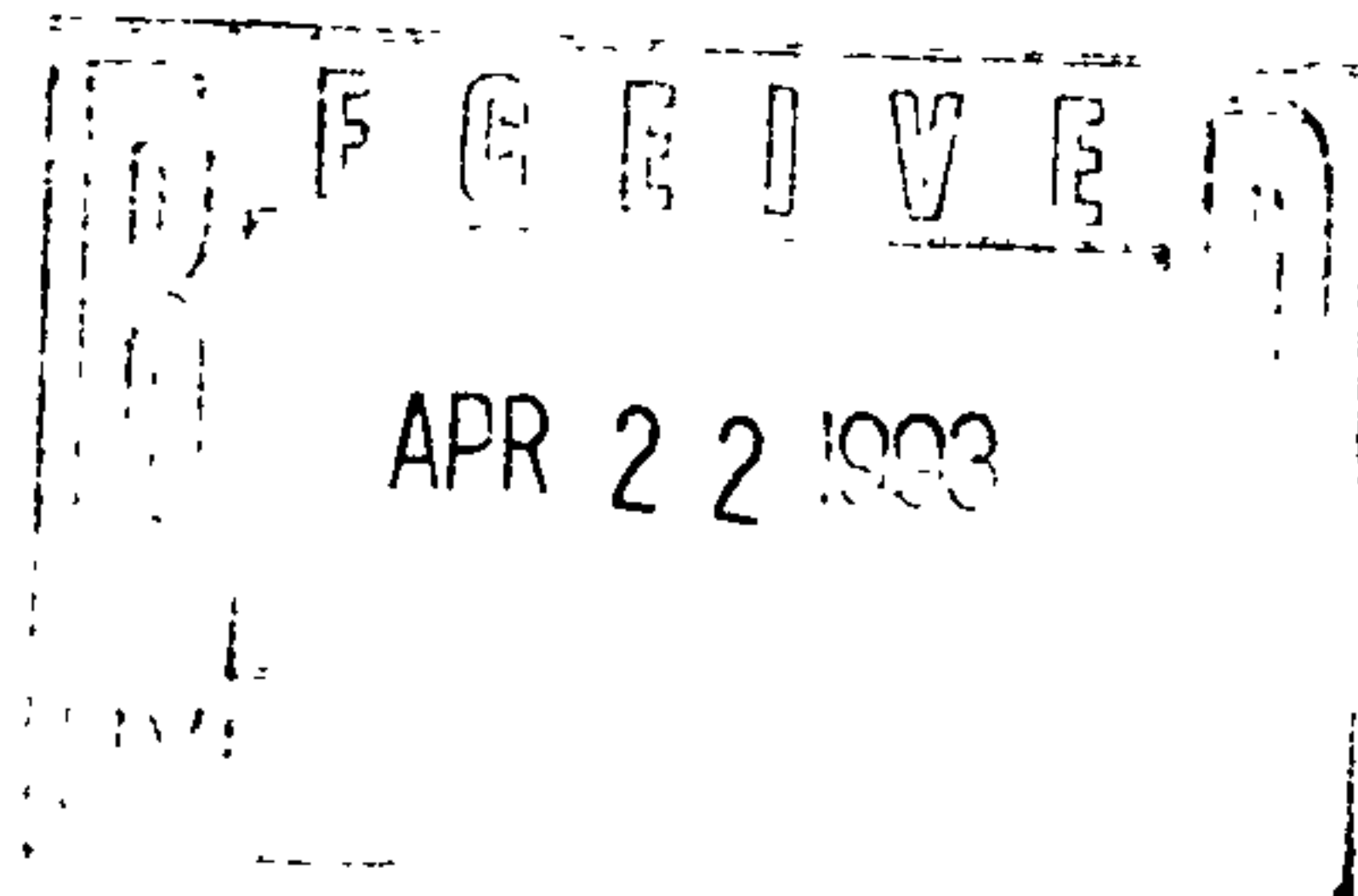
If you have any questions, or need additional information, please do not hesitate to call me.

Sincerely,

BRASHER ENGINEERING, INC.



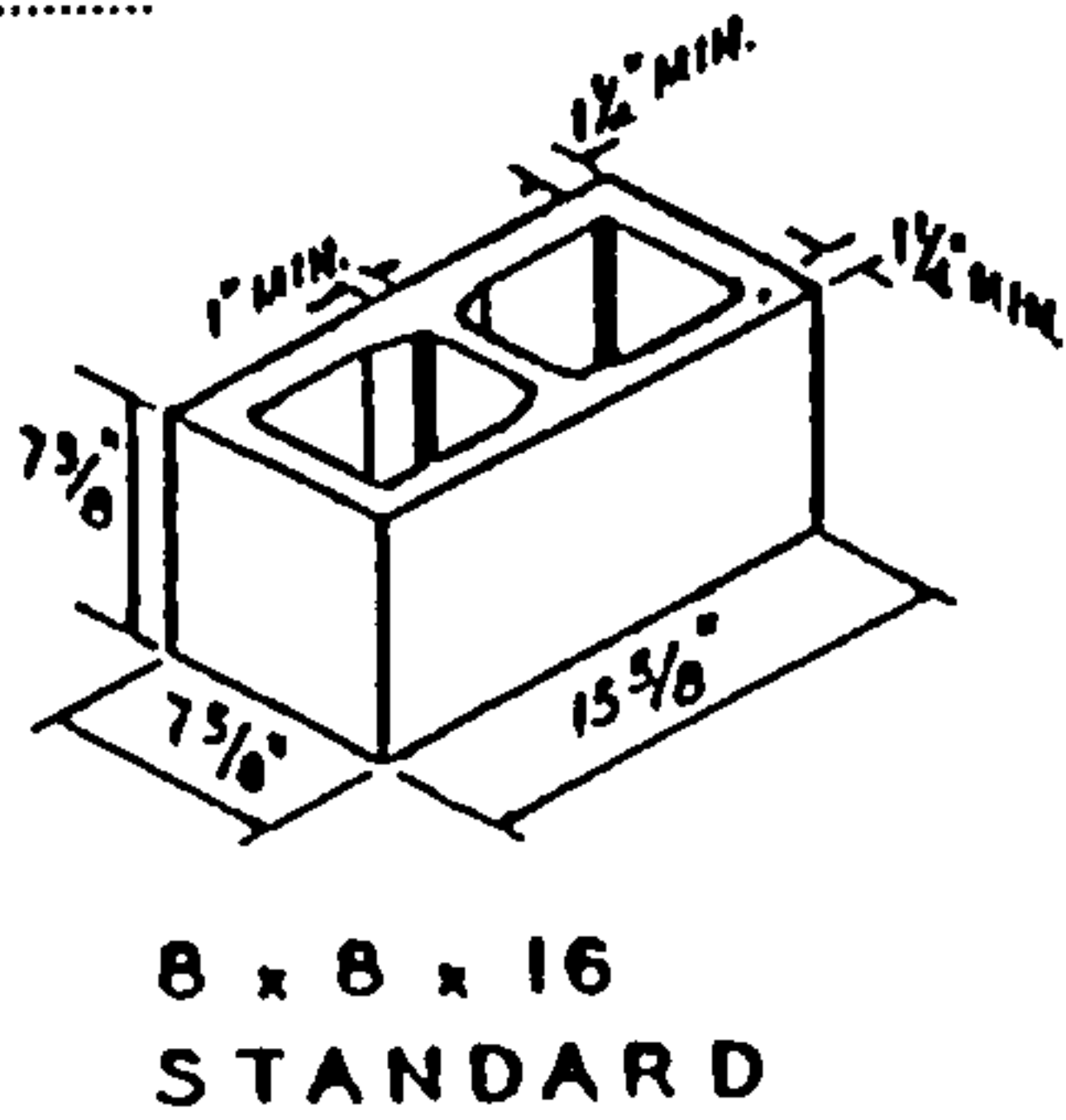
Jackie S. McDowell, P.E.



BRASHER ENGINEERING, INC.

11930 Menaul Blvd. NE, Suite 113
Albuquerque, New Mexico 87112
(505) 298-0422

Project Name High Point Subdivision
Project No 90452 Date 4-10-93
Subject 100 year air flow → @ R Wall -
turned block
By JEM Sheet 1 of 1



Assume cell
is 6" w x 5" h
4.2 sf / block
 $A = \frac{6 \times 5 \times 2}{144} =$

$$Q = CA \sqrt{2gh}$$

$$A = 0.43 \text{ sf}$$

$$C = 0.6$$

$$g = 32.2 \text{ ft/s}^2$$

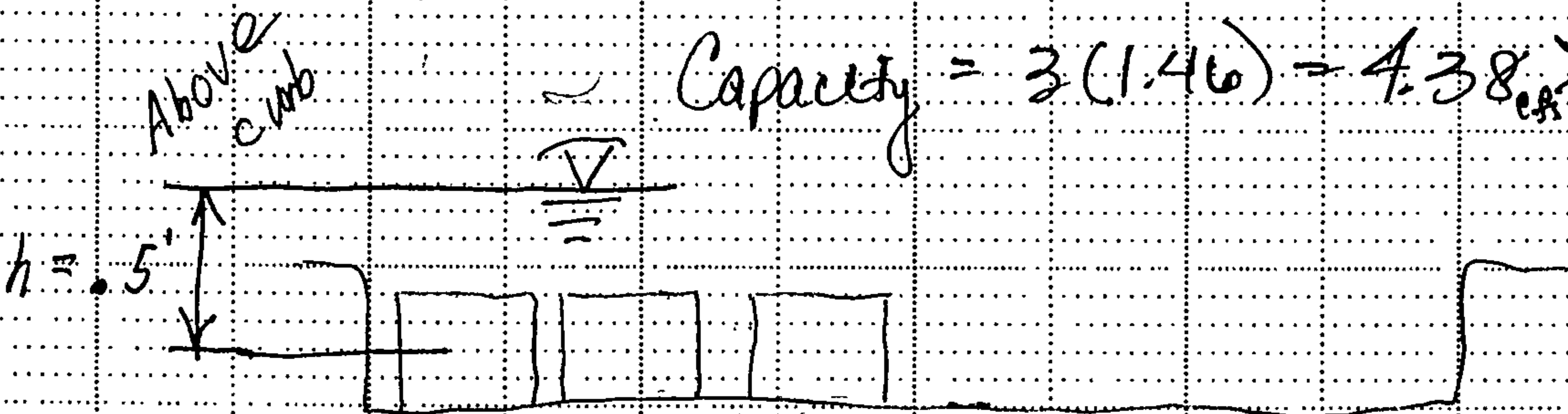
$$h = 0.5'$$

$$\therefore Q = 1.46 \text{ cfs / turned block}$$

⇒ Turn 3 blocks

$$\text{Capacity} = 3(1.46) = 4.38 \text{ cfs} > 4.22 \text{ cfs} \checkmark$$

OK.



PR. 2.2 1003



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN REVIEW COMMITTEE MEETING

04-15-93

2:30 P.M.

PROJECT: High Point Subdivision

Project No. 4618.90

CONSULTANT: Brasher Engineering, Inc.

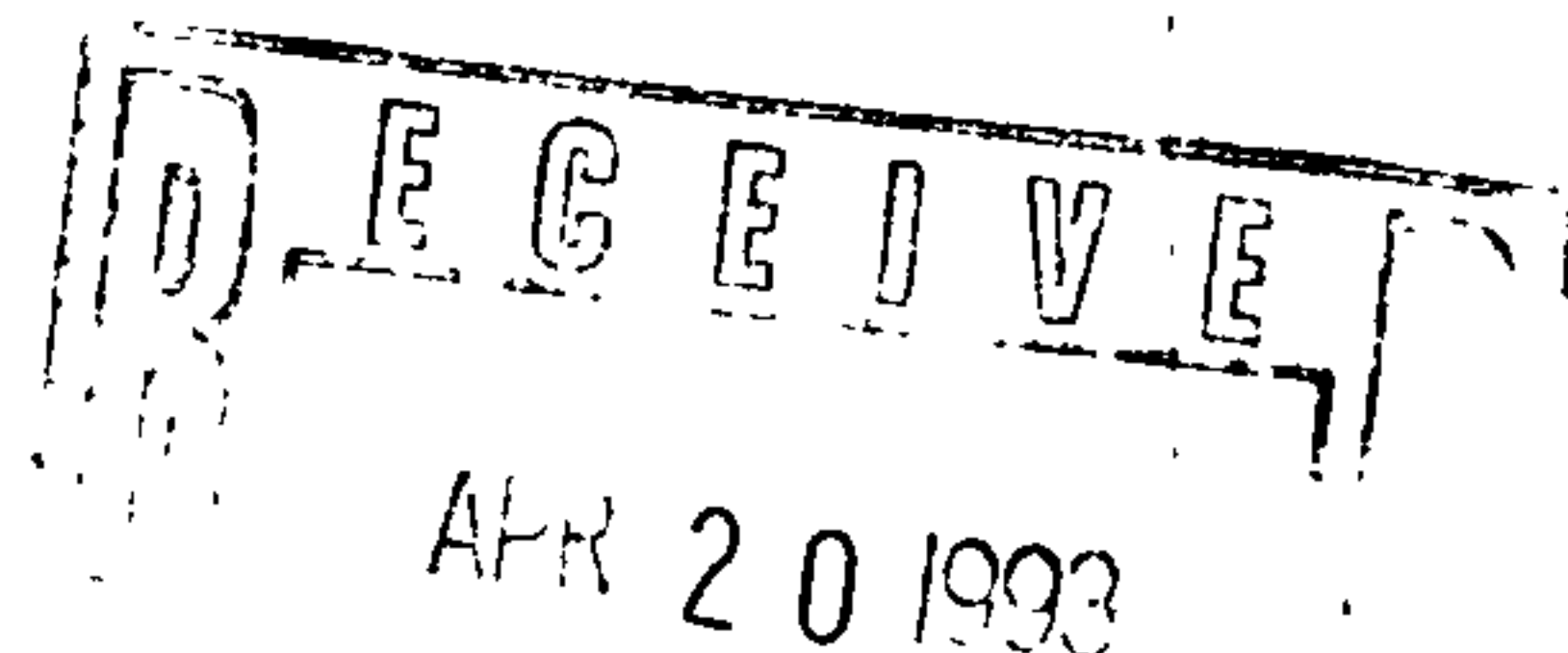
PRESENT: *[Signature]* Billy Goolsby, DRC Chairman
✓ Richard Dourte, Transportation Development
✓ Robert Kane, Utility Development
✓ John Curtin, Hydrology
✓ Joe Luehring, City Utility Coordinator
✓ Jackie McDowell, Consultant

COMMENTS:

1. Robert Kane provided verbal comments that the Consultant noted.
2. Richard Dourte provided verbal comments and mark-ups.
3. John Curtin provided verbal comments that were noted by the Consultant. The Consultant will be required to submit a certification of the grading for release of SIA.

The Consultant will make the appropriate corrections and submit to the Master Scheduler to route for signatures.

BG:vgl(WP+125469)



**CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING**

4-8-93
(DATE)

PROJECT NO: 4618.90
ZONE ATLAS: H-23

PROJECT NAME: HIGH POINT SUBD
(TRAMWAY + MANAVAL)

TYPE OF PROJECT: AHBA ☒ CIP ☐ PWC ☐ SAD ☐ ALL PRIVATE ☐

Contact Person: JACKIE McDOWELL Phone: 296-0422
Firm: (BRASHER OWNER)

Scheduled with the D.R.C. on 4-15-93 at 2:30 in Conf. Room 302
on the 3rd Floor of the old City Hall Building.

The Project Is Scheduled For:

/ / Design Report Review ☒ Final Plan Review (Approved Infra. List)
/ / Pre-Design Meeting / / Signoff of Plans (Mylars Required)
/ / Preliminary Plan Review / /

The Project Relates To:

☒ Water ☒ San. Sewer ☒ Paving ☒ Storm Drainage / /

The Attached Package Includes:

/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and are invited to attend. It will be the Project Managers responsibility to notify consulting engineering firms of date and time of scheduled meetings on all CIP projects.

On Private Plans: First 8 Receive Prel. Plans--First 5 Receive Final Plans

☒ Billy Goolsby	Project Review Section	All
☒ Richard Dourte	Transportation Development	All
☒ Stuart Reeder	Utility Design	All
☒ Hydro-Repres.	Hydrology	All
/ / Const. Repres.	Construction	All FINAL
/ / Bill Coleman	Traffic Operations	All
/ / Rick Roybal	Construction Coordinator	ALL FINAL
/ / Dick Salas	Street Maintenance	All
/ / Sergio Miranda	Water -Shutoff Plan: Yes/No	All WATER
/ / Diane Scena	Parks & Recreation	ALL LANDSCAPING
/ / Sheryl Germack	Transit Department	CIP/Memos
/ / Joe Luehring	Utility Coordinator	PWC & CIP
/ / Jim Fink	Line Maintenance	CIP/SAS
/ / Joe Dellalonga	City Architect	ARCHITECTURAL
/ / Lee Lunsford	SAD Engineer	SAD
/ / Brett Locke	Transportation Develop.	CIP/TRANS.
/ / Roger Green	Utility Design	CIP/WATER & SAS
/ / Mike Minturn	General Services Dept.	BUILDINGS
/ / Anita Boulton	PWD/Legal Assistant	SPECIFICATIONS
/ / Richard Sertich	Planning Department	CIP/Memos
/ / CIP Manager	CIP	CIP/Memos

EXHIBIT "D"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD
REQUIRED INFRASTRUCTURE LISTING
FOR HIGH POINT SUBDIVISION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed to be constructed for the above development.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
** 25' WIDE	RES. PAVING	HIGH POINT COURT	MENAU BLVD.	~ 200' NORTH
4' WIDE	SIDEWALK (both sides)	HIGH POINT COURT	MENAU BLVD.	~ 200' NORTH
6"	WATER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
8"	SANITARY SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
18"	STORM SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
* SINGLE "D"	STORM INLET	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
N/A	STREET LIGHT	PAR DPM HIGH POINT COURT		

* Must include an adequate overflow spillway for 100 year event or upsize SD. & inlet.
** Mountable C&G.

Signed By: [Signature]
Print Name: JACKIE S. McDOWELL
Firm: BLASTER ENGINEERING, INC.

*** Certification of Grading will be required prior to financial guarantee release.

This instructional information may be deleted from official listings.

Use additional sheets as necessary to complete the listing. The final page must be signed by the preparer and provide signature nature spaces for DRB members, as illustrated.

*Types may include Arterial Paving, Residential Paving, Water Line, Sanitary Sewer, Storm Sewer, Drainage Channel, Sidewalks, and Retaining Walls. Any non-standard design or waivers must be clearly described in this listing. If phased Platting is anticipated, a listing should be prepared for each proposed phase.

Development Review Board Member Approvals

<u>[Signature]</u> 3-02-93 Traffic Date	<u>Robert W. Kane</u> 3-2-93 PWD/UDD Date	<u>[Signature]</u> 3/2 Parks & Rec. Date
<u>[Signature]</u> 3/2/93 City Engineer/AMAFCA Date	<u>[Signature]</u> 3/2/93 DRB Chairman Date	



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 1, 1993

Jackie McDowell, P.E.
Brasher Engineering, Inc.
11930 Menqul Blvd. Suite 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR HIGH POINT SUBD (H-23/D16)}
STAMPED & DATED 2-15-93; RECEIVED FEBRUARY 16, 1993
FOR PRELIMINARY/FINAL PLAT & BUILDING PERMIT APPROVAL

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary Plat, Final Plat & Building Permit.

The Grading & Drainage Plan must be included in the set of construction documents that you submit for Building Permit.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Alan Martinez, Permits

WPHYD+7461;jpc

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: High Point Sub'd ZONE ATLAS/DRNG. FILE #: H-23/D16
DRB #: 92-0406 EPC #: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: Tract B-2, Sprawl Security Subdivision
CITY ADDRESS: 12777 Menaul Blvd. NE
ENGINEERING FIRM: Brasher Engineering Inc CONTACT: Jackie McDowell
ADDRESS: 11930 Menaul Blvd. Suite 113 PHONE: 296-0422
OWNER: John Mechenbier CONTACT: John Mechenbier
ADDRESS: 6801 Palomis Ave NE PHONE: 828-1676
ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: PCS CONTACT: Bernie Seitz
ADDRESS: 2400 Juan Tabo NE Suite 6-121 PHONE: 822-8532
CONTRACTOR: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

- ☒ YES
☐ NO
☒ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☒ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☒ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: 2-16-93
BY: Jackie McDowell



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN REVIEW COMMITTEE MEETING

02-09-93

3:00 P.M.

PROJECT: High Point Subdivision Lots 1-9

Project No. 4618.90

CONSULTANT: Brasher Engineering, Inc.

PRESENT: *[Signature]* Billy Goolsby, DRC Chairman
✓ Ed Adams, Transportation Development
✓ Robert Kane, Utility Development
✓ John Curtin, Hydrology
✓ Jackie McDowell, Consultant

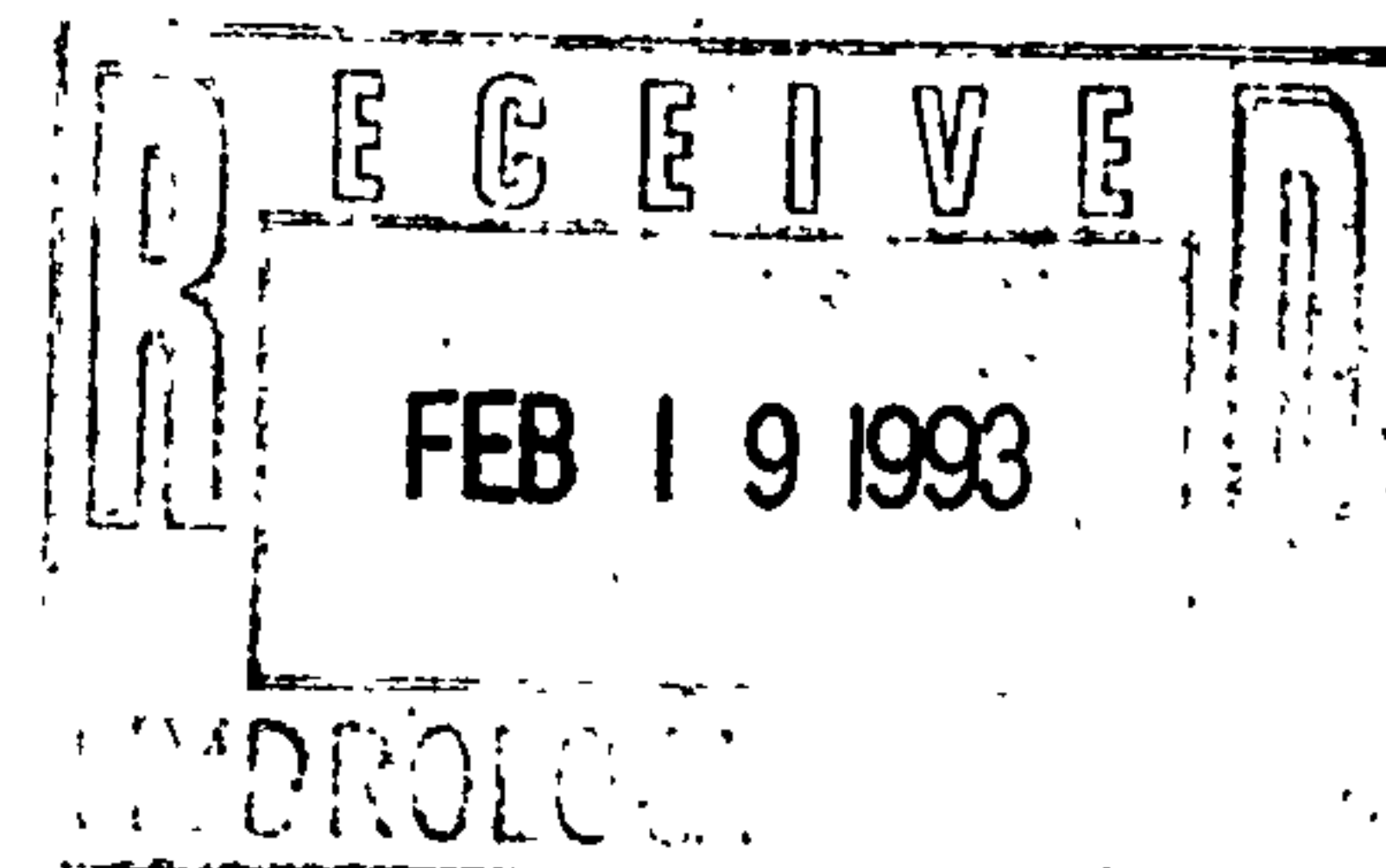
COMMENTS:

1. Robert Kane, provided verbal comments and mark-ups. Need an approved infrastructure list.
2. John Curtin, provided comments and mark-ups.
3. Ed Adams, provided verbal comments and mark-ups.
4. DRC Chairman, provided verbal comments and mark-ups.

The Consultant will make appropriate corrections, add necessary information and submit the mylars, prints and mark-ups to the Master Scheduler to schedule a final review/signature session.

BG:vgl(WP+125469)

0



CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING2-2-93
(DATE)PROJECT NO: 4618.90
ZONE ATLAS: H-23PROJECT NAME: HIGH POINT SUB'D
(NE CORNER OF TRAMWAY + MONTELU)TYPE OF PROJECT: AHBA ☒ CIP ☐ PWC ☐ SAD ☐ ALL PRIVATE ☐Contact Person: JACKIE McDOWELL Phone: 296-0422
Firm: BRASHER-KNOXScheduled with the D.R.C. on 2-9-93 at 3:00 in Conf. Room 302
on the 3rd Floor of the old City Hall Building.The Project Is Scheduled For:

/ / Design Report Review	/ / Final Plan Review (<u>Approved</u> Infra. List)
/ / Pre-Design Meeting	/ / Signoff of Plans (<u>Mylars</u> Required)
☒ Preliminary Plan Review	/ /

The Project Relates To:☒ Water ☒ San. Sewer ☒ Paving ☒ Storm Drainage / /The Attached Package Includes:

/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and are invited to attend. It will be the Project Managers responsibility to notify consulting engineering firms of date and time of scheduled meetings on all CIP projects.

On Private Plans: First 8 Receive Prel. Plans--First 5 Receive Final Plans

SHAPE	/D/ Billy Goolsby	Project Review Section	All
	/D/ Richard Dourte	Transportation Development	All
	/D/ Stuart Reeder	Utility Design	All
	/D/ Hydro Repres.	Hydrology	All
	/D/ Const. Repres.	Construction	All FINAL
	/D/ Bill Coleman	Traffic Operations	All
	/ / Rick Roybal	Construction Coordinator	ALL FINAL
	/D/ Dick Salas	Street Maintenance	All
	/ / Sergio Miranda	Water -Shutoff Plan; Yes/No	All WATER
	/D/ Diane Scena	Parks & Recreation	ALL LANDSCAPING
	/ / Sheryl Germack	Transit Department	CIP/Memos
	/M/ Joe Luehring	Utility Coordinator	PWC & CIP
	/ / Jim Fink	Line Maintenance	CIP/SAS
	/ / Joe Dellalonga	City Architect	ARCHITECTURAL
	/ / Lee Lunsford	SAD Engineer	SAD
	/ / Brett Locke	Transportation Develop.	CIP/TRANS.
	/ / Roger Green	Utility Design	CIP/WATER & SAS
	/ / Mike Minturn	General Services Dept.	BUILDINGS
	/ / Anita Boulton	PWD/Legal Assistant	SPECIFICATIONS
	/ / Richard Sertich	Planning Department	CIP/Memos
/ / CIP Manager	CIP	CIP/Memos	

EXHIBIT "D"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD
REQUIRED INFRASTRUCTURE LISTING
FOR HIGH POINT SUBDIVISION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed to be constructed for the above development.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
25' WIDE	RES. PAVING	HIGH POINT COURT	MENARD BLVD.	~ 200' NORTH
4' WIDE	SIDEWALK	HIGH POINT COURT	MENARD BLVD.	~ 200' NORTH
6"	WATER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
8"	SANITARY SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
18"	STORM SEWER LINE	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH
SINGLE "D"	STORM INLET	HIGH POINT COURT	HIGH POINT COURT	TRAMWAY BIKE PATH

Signed By: [Signature]
Print Name: JACKIE S. McDOWELL
Firm: BRASHER ENGINEERING, INC.

This instructional information may be deleted from official listings.

Use additional sheets as necessary to complete the listing. The final page must be signed by the preparer and provide signature nature spaces for DRB members, as illustrated.

*Types may include Arterial Paving, Residential Paving, Water Line, Sanitary Sewer, Storm Sewer, Drainage Channel, Sidewalks, and Retaining Walls. Any non-standard design or waivers must be clearly described in this listing.

If phased Platting is anticipated, a listing should be prepared for each proposed phase.

Development Review Board Member Approvals

Traffic	Date	PWD	Date	Parks & Rec.	Date
City Engineer/AMAFCA	Date	DRB Chairman	Date		



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 22, 1993

Jackie McDowell, P.E.
Brasher Engineering, Inc.
11930 Menquí Blvd. Suite 113
Albuquerque, N.M. 87112

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR HIGH POINT SUBD (H-23/D16)
RECEIVED JANUARY 14, 1993 FOR PRELIMINARY PLAT APPROVAL
STAMPED & DATED 1-13-93

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology rejects this submittal because it does not address the concerns noted at the Pre-Design Conference nor does it meet the criteria established in the DPM checklist for Preliminary Plat approval.

If you have any questions about this project, you may contact me at 768-2727.

Sincerely,


John P. Curtin, P.E.
PWD/Hydrology

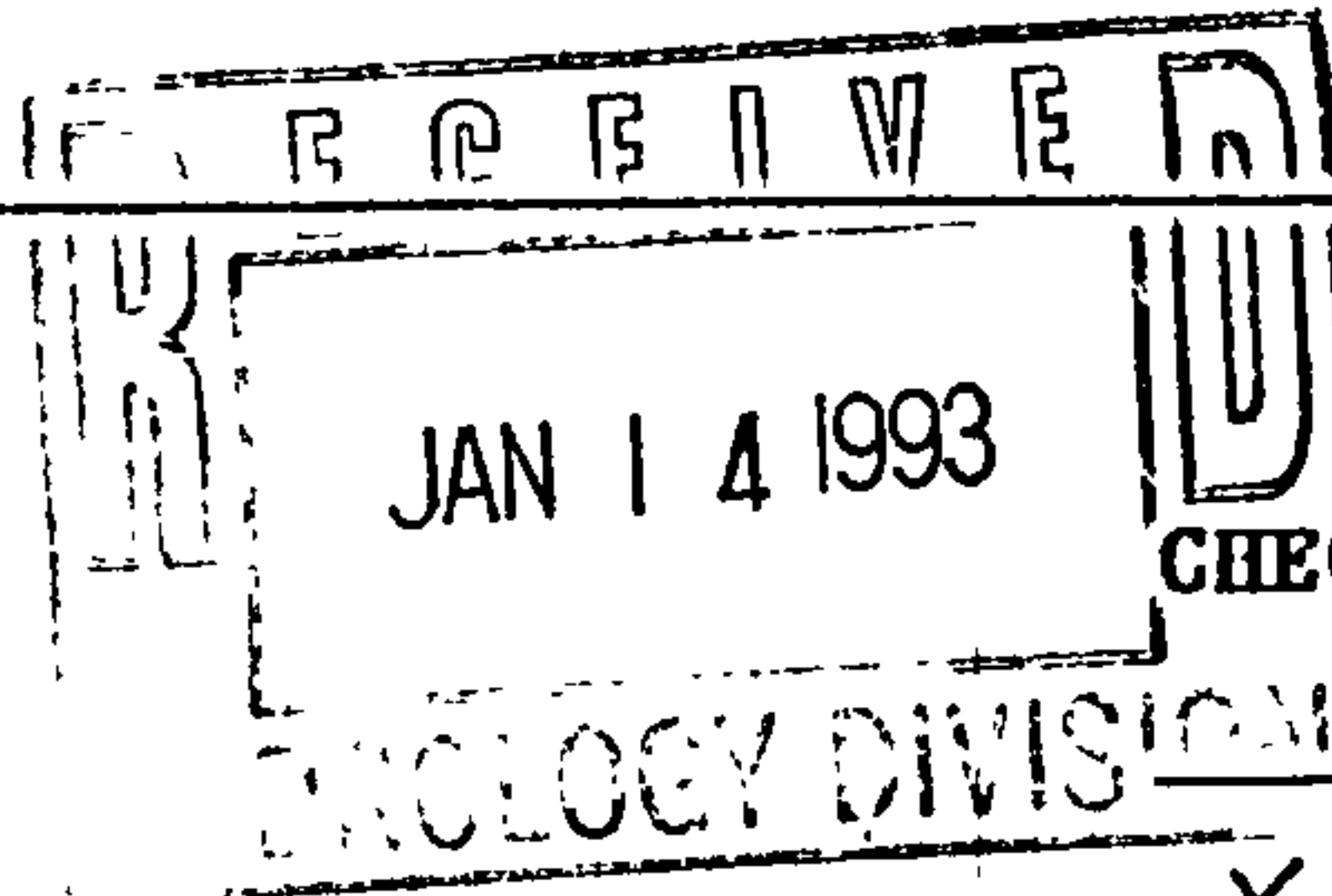
cc: Fred Aguirre, City Hydrologist

WPHYD+7461;jpc

PUBLIC WORKS DEPARTMENT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: High Point Sub'd ZONE ATLAS/DRNG. FILE #: H-23 / 016
 DRB #: 92-0406 EPC #: _____ WORK ORDER #: _____
 LEGAL DESCRIPTION: Tract B-2, Sprawl Security Subdivision
 CITY ADDRESS: 12777 Menaul Blvd. NE
 ENGINEERING FIRM: Brasher Engineering, Inc CONTACT: Jackie McDowell
 ADDRESS: 11930 Menaul Blvd. Suite 113 PHONE: 296-0422
 OWNER: John Mechenbier CONTACT: John Mechenbier
 ADDRESS: 6801 Palomis Ave NE PHONE: 828-1676
 ARCHITECT: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____
 SURVEYOR: PCS CONTACT: Bernie Seitz
 ADDRESS: 2400 Juan Tabo NE Suite 6-121 PHONE: 822-8532
 CONTRACTOR: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____



TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☒ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER _____

PRE-DESIGN MEETING:

- ☒ YES
- ☐ NO
- ☒ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☒ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☒ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☒ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

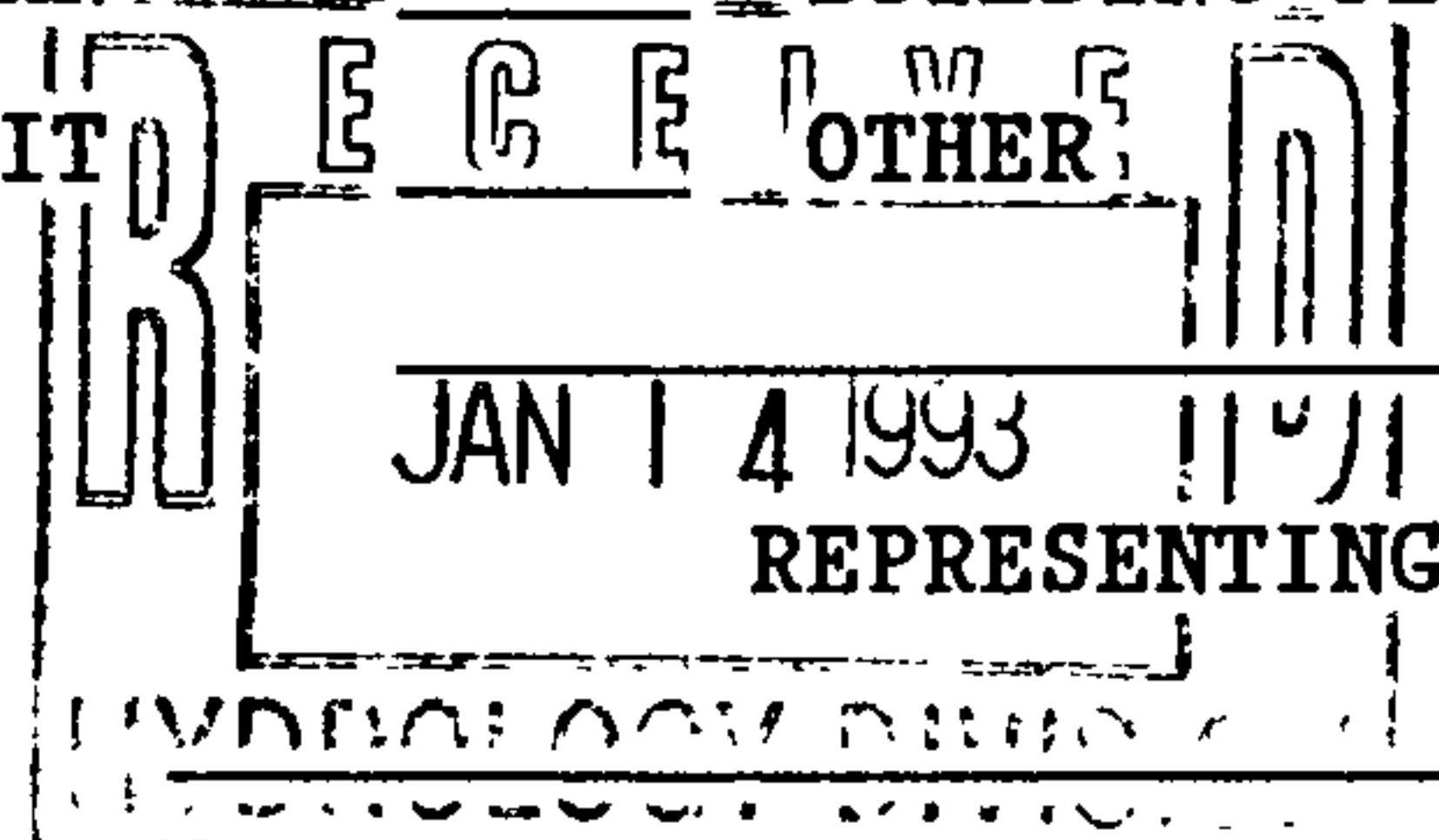
DATE SUBMITTED: 1-12-93
 BY: Jackie McDowell

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: H 23 DATE: 10/22/92
EPC NO.: _____ DRB NO.: _____ ZONE: C1
SUBJECT: John Mechenbier Subd.
STREET ADDRESS: _____
LEGAL DESCRIPTION: Sproul Security

APPROVAL REQUESTED: ☒ PRELIMINARY PLAT ☐ FINAL PLAT
☐ SITE DEVELOPMENT PLAN ☐ BUILDING PERMIT
☐ GRADING/PAVING PERMIT ☐ OTHER _____



ATTENDANCE: ^{WHO} JACKIE McDowell
FRED J. AGUIRRE

FINDINGS:

An approved drainage report will be required for plat approval. An acceptable concept for this site with ~~respect~~ respect to the close proximity of the arroyo is a cut-off wall along the ~~street~~ street property line next to the arroyo.

- Free discharge into the arroyo is acceptable, however, the storm drain within the proposed cul-de-sac must ~~have~~ have a 100yr overflow system to the arroyo.
- Recommend that this project be scheduled for a Preapplication Meeting and Sketch Plat Review.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: [Signature]
TITLE: _____
DATE: 10/22/92

SIGNED: [Signature]
TITLE: Civil Engineer
DATE: 10-22-92

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

CONCEPTUAL DRAINAGE PLAN

LOCATION AND EXISTING CONDITION:

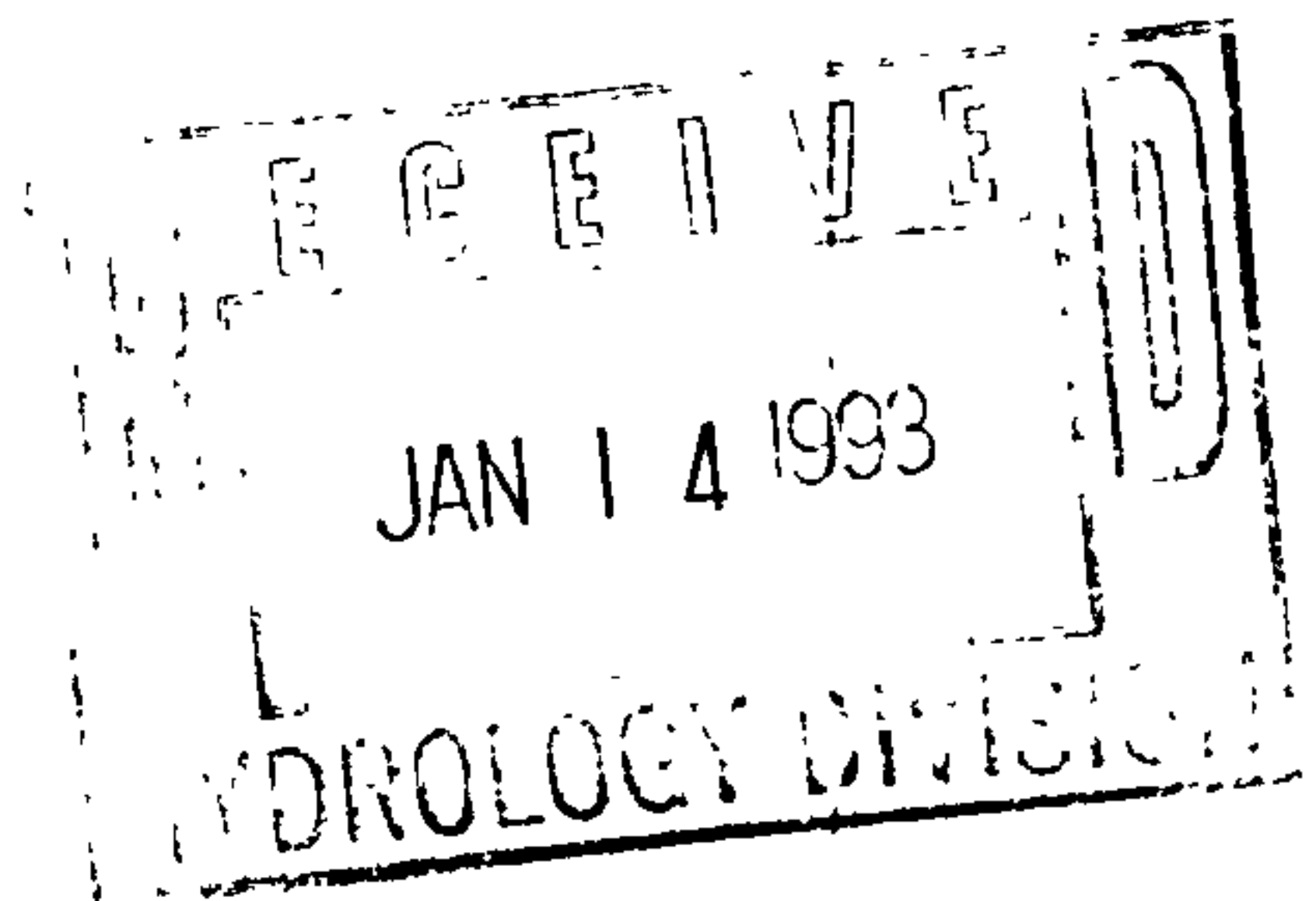
The site is located at the northeast corner of the intersection of Menaul Blvd. and Tramway Blvd. NE containing approximately 1.44 acres. The site is currently undeveloped and slopes from the east to the west with an average slope of 5.5%. The site is bounded on the south by Menaul Blvd., on the west by the Tramway bike path, and on the north by the Piedra Lisa Channel. There is an existing 48" storm sewer located within the Tramway bike path approximately 30 feet west of the property.

PROPOSED CONDITION:

Proposed development of the site includes 9 residential lots surrounding a cul-de-sac. A majority of the property will be graded to drain to the cul-de-sac. A single type "D" catch basin will be installed at the downstream end of the cul-de-sac to intercept the storm water runoff. The catch basin will be connected to the existing storm sewer manhole as shown on the attached drawings via a drop connection. Minimal storm water runoff from back yards will be graded to drain through the property line block walls to either the Piedra Lisa Channel, the Tramway bike path, or Menaul Blvd.

CALCULATION:

See attached.



Project: High Point Subdivision

Project No.: 90452

11-Jan-93

Calculations: Total Basin

Calculations are based on "Section 22.2 Hydrology of the
Development Process Manual, Volume 2, Design Criteria for the
City of Albuquerque, New Mexico, August 1991 - basins < 40 acres".

Precipitation Zone = 4

Depth at 100-year, 6-hour storm: (Table 2)

P = 2.90 inches

Land Treatments:

From Table 5 - Percent Treatment D

Single Family Residential =

$$7 * \text{SQR}((N * N) + (5 * N))$$

where N = units/acre

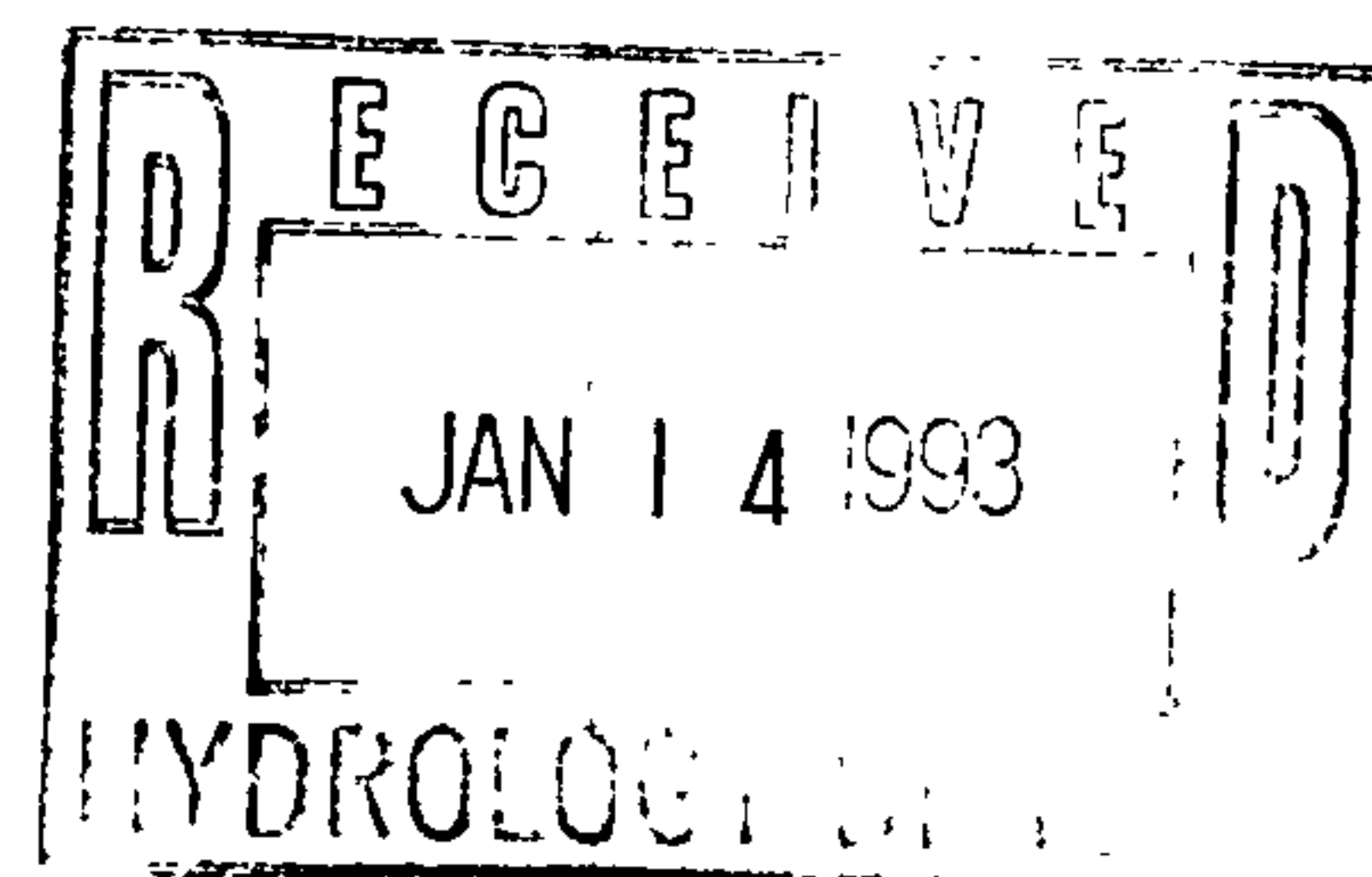
$$N = 9 / 1.44 = 6.25, \text{ ok } > 6$$

$$N = 6.25$$

Therefore Percent Treatment D = 58.70%
(includes local streets)

Areas: (acres)	Existing	Proposed
Treatment A	1.44	0.00
Treatment B	0.00	0.30
Treatment C	0.00	0.29
Treatment D	0.00	0.85
Total (acres) =	1.44	1.44

Excess Precipitation (E): (Table 8)	100 yr	10 yr	2 yr
Treatment A	0.80	0.28	0.02
Treatment B	1.08	0.46	0.11
Treatment C	1.46	0.73	0.27
Treatment D	2.64	1.69	1.01



Weighted E:	100 year Existing E*A	100 year Proposed E*A	10 year Existing E*A	10 year Proposed E*A	2 year Existing E*A	2 year Proposed E*A
Treatment A	1.15	0.00	0.40	0.00	0.03	0.00
Treatment B	0.00	0.32	0.00	0.14	0.00	0.03
Treatment C	0.00	0.42	0.00	0.21	0.00	0.08
Treatment D	0.00	2.24	0.00	1.44	0.00	0.86
Total	1.15	2.99	0.40	1.79	0.03	0.97

$$\text{Weighted E} = \text{Total E} \cdot A / \text{Total Area}$$

$$\text{Total Area} = 1.44$$

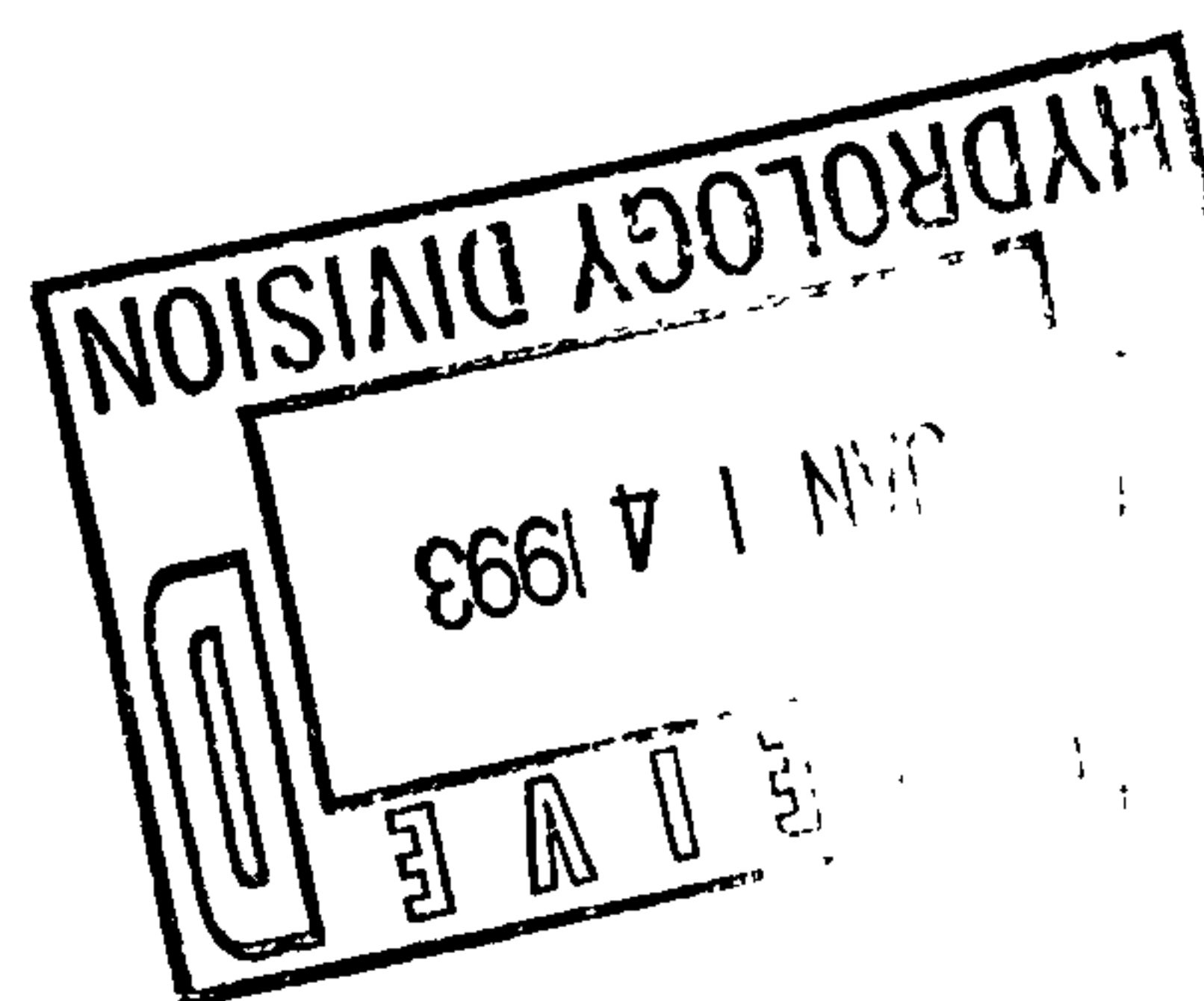
	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Weighted E (inches) =	0.80	2.08	0.28	1.24	0.02	0.67
Weighted E (feet) =	0.07	0.17	0.02	0.10	0.00	0.06

$$\text{Volume} = \text{Weighted E} \cdot \text{Watershed Area}$$

	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Volume (acre-feet) =	0.10	0.25	0.03	0.15	0.00	0.08
Volume (cubic feet) =	4,182	10,859	1,464	6,484	105	3,520

Peak Discharge (cfs/acre) = Q(p): (Table 9)	Q(p) 100 year	Q(p) 10 year	Q(p) 2 year
Treatment A	2.20	0.87	0.05
Treatment B	2.92	1.45	0.38
Treatment C	3.73	2.26	1.00
Treatment D	5.25	3.57	2.17

Total Q(p), cfs:	100 year Existing Q(p)*A	100 year Proposed Q(p)*A	10 year Existing Q(p)*A	10 year Proposed Q(p)*A	2 year Existing Q(p)*A	2 year Proposed Q(p)*A
Treatment A	3.17	0.00	1.25	0.00	0.07	0.00
Treatment B	0.00	0.88	0.00	0.44	0.00	0.11
Treatment C	0.00	1.08	0.00	0.66	0.00	0.29
Treatment D	0.00	4.46	0.00	3.03	0.00	1.84
Total Q (cfs) =	3.17	6.42	1.25	4.12	0.07	2.25



RATIONAL METHOD:

Coefficient C: (Table 11)	100 year	10 year	2 year
Treatment A	0.39	0.23	0.02
Treatment B	0.52	0.38	0.16
Treatment C	0.66	0.59	0.43
Treatment D	0.94	0.93	0.93
Peak Intensity (in/hour): (Table 10)	5.61	3.83	2.34

Q = CIA (cfs):	100 year Existing CIA	100 year Proposed CIA	10 year Existing CIA	10 year Proposed CIA	2 year Existing CIA	2 year Proposed CIA
Treatment A	3.15	0.00	1.27	0.00	0.07	0.00
Treatment B	0.00	0.88	0.00	0.44	0.00	0.11
Treatment C	0.00	1.07	0.00	0.66	0.00	0.29
Treatment D	0.00	4.48	0.00	3.03	0.00	1.85
Total Q (cfs) =	3.15	6.43	1.27	4.12	0.07	2.25

